



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : C12N 15/12, C07K 14/47, C12Q 1/68, A61K 39/395, G01N 33/68, 33/574, C07K 16/30, C12N 15/62, 5/02 // A61P 35/00	A2	(11) International Publication Number: WO 00/04149 (43) International Publication Date: 27 January 2000 (27.01.00)																					
(21) International Application Number: PCT/US99/15838 (22) International Filing Date: 14 July 1999 (14.07.99) (30) Priority Data: <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">09/115,453</td> <td style="width: 40%;">14 July 1998 (14.07.98)</td> <td style="width: 30%;">US</td> </tr> <tr> <td>09/116,134</td> <td>14 July 1998 (14.07.98)</td> <td>US</td> </tr> <tr> <td>09/159,822</td> <td>23 September 1998 (23.09.98)</td> <td>US</td> </tr> <tr> <td>09/159,812</td> <td>23 September 1998 (23.09.98)</td> <td>US</td> </tr> <tr> <td>09/232,880</td> <td>15 January 1999 (15.01.99)</td> <td>US</td> </tr> <tr> <td>09/232,149</td> <td>15 January 1999 (15.01.99)</td> <td>US</td> </tr> <tr> <td>09/288,946</td> <td>9 April 1999 (09.04.99)</td> <td>US</td> </tr> </table> (71) Applicant: CORIXA CORPORATION [US/US]; Suite 200, 1124 Columbia Street, Seattle, WA 98104 (US). (72) Inventors: DILLON, Davin, Clifford; 21607 N.E. 24th Street, Redmond, WA 98053 (US). HARLOCKER, Susan, Louise; 6203 20th Avenue N.W., Seattle, WA 98107 (US). YUQIU, Jiang; 5001 South 232nd Street, Kent, WA 98032 (US). XU, Jiangchun; 15805 S.E. 43rd Place, Bellevue, WA 98006 (US). MITCHAM, Jennifer, Lynn; 16677 Northeast 88th Street, Redmond, WA 98052 (US).		09/115,453	14 July 1998 (14.07.98)	US	09/116,134	14 July 1998 (14.07.98)	US	09/159,822	23 September 1998 (23.09.98)	US	09/159,812	23 September 1998 (23.09.98)	US	09/232,880	15 January 1999 (15.01.99)	US	09/232,149	15 January 1999 (15.01.99)	US	09/288,946	9 April 1999 (09.04.99)	US	(74) Agents: MAKI, David, J. et al.; Seed and Berry LLP, 6300 Columbia, 701 Fifth Avenue, Seattle, WA 98104-7092 (US). (81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>Without international search report and to be republished upon receipt of that report.</i>
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(54) Title: COMPOSITIONS AND METHODS FOR THERAPY AND DIAGNOSIS OF PROSTATE CANCER (57) Abstract <p>Compositions and methods for the therapy and diagnosis of cancer, such as prostate cancer, are disclosed. Compositions may comprise one or more prostate tumor proteins, immunogenic portions thereof, or polynucleotides that encode such portions. Alternatively, a therapeutic composition may comprise an antigen presenting cell that expresses a prostate tumor protein, or a T cell that is specific for cells expressing such a protein. Such compositions may be used, for example, for the prevention and treatment of diseases such as prostate cancer. Diagnostic methods based on detecting a prostate tumor protein, or mRNA encoding such a protein, in a sample are also provided.</p>																							

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COMPOSITIONS AND METHODS FOR THERAPY AND DIAGNOSIS OF PROSTATE CANCER

TECHNICAL FIELD

The present invention relates generally to therapy and diagnosis of cancer, such as prostate cancer. The invention is more specifically related to polypeptides comprising at least a portion of a prostate tumor protein, and to polynucleotides encoding such polypeptides. Such polypeptides and polynucleotides may be used in vaccines and pharmaceutical compositions for prevention and treatment of prostate cancer, and for the diagnosis and monitoring of such cancers.

BACKGROUND OF THE INVENTION

Prostate cancer is the most common form of cancer among males, with an estimated incidence of 30% in men over the age of 50. Overwhelming clinical evidence shows that human prostate cancer has the propensity to metastasize to bone, and the disease appears to progress inevitably from androgen dependent to androgen refractory status, leading to increased patient mortality. This prevalent disease is currently the second leading cause of cancer death among men in the U.S.

In spite of considerable research into therapies for the disease, prostate cancer remains difficult to treat. Commonly, treatment is based on surgery and/or radiation therapy, but these methods are ineffective in a significant percentage of cases. Two previously identified prostate specific proteins - prostate specific antigen (PSA) and prostatic acid phosphatase (PAP) - have limited therapeutic and diagnostic potential. For example, PSA levels do not always correlate well with the presence of prostate cancer, being positive in a percentage of non-prostate cancer cases, including benign prostatic hyperplasia (BPH). Furthermore, PSA measurements correlate with prostate volume, and do not indicate the level of metastasis.

In spite of considerable research into therapies for these and other cancers, prostate cancer remains difficult to diagnose and treat effectively. Accordingly, there is a need in the art for improved methods for detecting and treating such cancers. The present invention fulfills these needs and further provides other related advantages.

SUMMARY OF THE INVENTION

Briefly stated, the present invention provides compositions and methods for the diagnosis and therapy of cancer, such as prostate cancer. In one aspect, the present

invention provides polypeptides comprising at least a portion of a prostate tumor protein, or a variant thereof. Certain portions and other variants are immunogenic, such that the ability of the variant to react with antigen-specific antisera is not substantially diminished. Within certain embodiments, the polypeptide comprises at least an immunogenic portion of a prostate tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of: (a) sequences recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472; (b) sequences that hybridize to any of the foregoing sequences under moderately stringent conditions; and (c) complements of any of the sequence of (a) or (b). In certain specific embodiments, such a polypeptide comprises at least a portion, or variant thereof, of a tumor protein that includes an amino acid sequence selected from the group consisting of sequences recited in any one of SEQ ID NO: 112-114, 172, 176, 178, 327, 329, 331, 336, 339, 376-380 and 383.

The present invention further provides polynucleotides that encode a polypeptide as described above, or a portion thereof (such as a portion encoding at least 15 amino acid residues of a prostate tumor protein), expression vectors comprising such polynucleotides and host cells transformed or transfected with such expression vectors.

Within other aspects, the present invention provides pharmaceutical compositions comprising a polypeptide or polynucleotide as described above and a physiologically acceptable carrier.

Within a related aspect of the present invention, vaccines are provided. Such vaccines comprise a polypeptide or polynucleotide as described above and a non-specific immune response enhancer.

The present invention further provides pharmaceutical compositions that comprise: (a) an antibody or antigen-binding fragment thereof that specifically binds to a prostate tumor protein; and (b) a physiologically acceptable carrier.

Within further aspects, the present invention provides pharmaceutical compositions comprising: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) a pharmaceutically acceptable carrier or excipient. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B cells.

Within related aspects, vaccines are provided that comprise: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) a non-specific immune response enhancer.

The present invention further provides, in other aspects, fusion proteins that comprise at least one polypeptide as described above, as well as polynucleotides encoding such fusion proteins.

Within related aspects, pharmaceutical compositions comprising a fusion protein, or a polynucleotide encoding a fusion protein, in combination with a physiologically acceptable carrier are provided.

Vaccines are further provided, within other aspects, that comprise a fusion protein, or a polynucleotide encoding a fusion protein, in combination with a non-specific immune response enhancer.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient a pharmaceutical composition or vaccine as recited above.

The present invention further provides, within other aspects, methods for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a prostate tumor protein, wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the protein from the sample.

Within related aspects, methods are provided for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated as described above.

Methods are further provided, within other aspects, for stimulating and/or expanding T cells specific for a prostate tumor protein, comprising contacting T cells with one or more of: (i) a polypeptide as described above; (ii) a polynucleotide encoding such a polypeptide; and/or (iii) an antigen presenting cell that expresses such a polypeptide; under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells. Isolated T cell populations comprising T cells prepared as described above are also provided.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population as described above.

The present invention further provides methods for inhibiting the development of a cancer in a patient, comprising the steps of: (a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with one or more of: (i) a polypeptide comprising at least an immunogenic portion of a prostate tumor protein; (ii) a polynucleotide encoding such a polypeptide; and (iii) an antigen-presenting cell that expressed such a polypeptide; and (b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient. Proliferated cells may, but need not, be cloned prior to administration to the patient.

Within further aspects, the present invention provides methods for determining the presence or absence of a cancer in a patient, comprising: (a) contacting a biological sample obtained from a patient with a binding agent that binds to a polypeptide as recited

above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; and (c) comparing the amount of polypeptide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within preferred embodiments, the binding agent is an antibody, more preferably a monoclonal antibody. The cancer may be prostate cancer.

The present invention also provides, within other aspects, methods for monitoring the progression of a cancer in a patient. Such methods comprise the steps of: (a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polypeptide detected in step (c) with the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

The present invention further provides, within other aspects, methods for determining the presence or absence of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor protein; (b) detecting in the sample a level of a polynucleotide, preferably mRNA, that hybridizes to the oligonucleotide; and (c) comparing the level of polynucleotide that hybridizes to the oligonucleotide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within certain embodiments, the amount of mRNA is detected via polymerase chain reaction using, for example, at least one oligonucleotide primer that hybridizes to a polynucleotide encoding a polypeptide as recited above, or a complement of such a polynucleotide. Within other embodiments, the amount of mRNA is detected using a hybridization technique, employing an oligonucleotide probe that hybridizes to a polynucleotide that encodes a polypeptide as recited above, or a complement of such a polynucleotide.

In related aspects, methods are provided for monitoring the progression of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor protein; (b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polynucleotide detected in step (c) with the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

Within further aspects, the present invention provides antibodies, such as monoclonal antibodies, that bind to a polypeptide as described above, as well as diagnostic

kits comprising such antibodies. Diagnostic kits comprising one or more oligonucleotide probes or primers as described above are also provided.

These and other aspects of the present invention will become apparent upon reference to the following detailed description and attached drawings. All references disclosed herein are hereby incorporated by reference in their entirety as if each was incorporated individually.

BRIEF DESCRIPTION OF THE DRAWINGS AND SEQUENCE IDENTIFIERS

Figure 1 illustrates the ability of T cells to kill fibroblasts expressing the representative prostate tumor polypeptide P502S, as compared to control fibroblasts. The percentage lysis is shown as a series of effector:target ratios, as indicated.

Figures 2A and 2B illustrate the ability of T cells to recognize cells expressing the representative prostate tumor polypeptide P502S. In each case, the number of γ -interferon spots is shown for different numbers of responders. In Figure 2A, data is presented for fibroblasts pulsed with the P2S-12 peptide, as compared to fibroblasts pulsed with a control E75 peptide. In Figure 2B, data is presented for fibroblasts expressing P502S, as compared to fibroblasts expressing HER-2/*neu*.

Figure 3 represents a peptide competition binding assay showing that the P1S#10 peptide, derived from P501S, binds HLA-A2. Peptide P1S#10 inhibits HLA-A2 restricted presentation of fluM58 peptide to CTL clone D150M58 in TNF release bioassay. D150M58 CTL is specific for the HLA-A2 binding influenza matrix peptide fluM58.

Figure 4 illustrates the ability of T cell lines generated from P1S#10 immunized mice to specifically lyse P1S#10-pulsed Jurkat A2Kb targets and P501S-transduced Jurkat A2Kb targets, as compared to EGFP-transduced Jurkat A2Kb. The percent lysis is shown as a series of effector to target ratios, as indicated.

Figure 5 illustrates the ability of a T cell clone to recognize and specifically lyse Jurkat A2Kb cells expressing the representative prostate tumor polypeptide P501S, thereby demonstrating that the P1S#10 peptide may be a naturally processed epitope of the P501S polypeptide.

Figures 6A and 6B are graphs illustrating the specificity of a CD8⁺ cell line (3A-1) for a representative prostate tumor antigen (P501S). Figure 6A shows the results of a ⁵¹Cr release assay. The percent specific lysis is shown as a series of effector:target ratios, as indicated. Figure 6B shows the production of interferon-gamma by 3A-1 cells stimulated with autologous B-LCL transduced with P501S, at varying effector:target ratios as indicated.

SEQ ID NO: 1 is the determined cDNA sequence for F1-13

SEQ ID NO: 2 is the determined 3' cDNA sequence for F1-12

SEQ ID NO: 3 is the determined 5' cDNA sequence for F1-12
SEQ ID NO: 4 is the determined 3' cDNA sequence for F1-16
SEQ ID NO: 5 is the determined 3' cDNA sequence for H1-1
SEQ ID NO: 6 is the determined 3' cDNA sequence for H1-9
SEQ ID NO: 7 is the determined 3' cDNA sequence for H1-4
SEQ ID NO: 8 is the determined 3' cDNA sequence for J1-17
SEQ ID NO: 9 is the determined 5' cDNA sequence for J1-17
SEQ ID NO: 10 is the determined 3' cDNA sequence for L1-12
SEQ ID NO: 11 is the determined 5' cDNA sequence for L1-12
SEQ ID NO: 12 is the determined 3' cDNA sequence for N1-1862
SEQ ID NO: 13 is the determined 5' cDNA sequence for N1-1862
SEQ ID NO: 14 is the determined 3' cDNA sequence for J1-13
SEQ ID NO: 15 is the determined 5' cDNA sequence for J1-13
SEQ ID NO: 16 is the determined 3' cDNA sequence for J1-19
SEQ ID NO: 17 is the determined 5' cDNA sequence for J1-19
SEQ ID NO: 18 is the determined 3' cDNA sequence for J1-25
SEQ ID NO: 19 is the determined 5' cDNA sequence for J1-25
SEQ ID NO: 20 is the determined 5' cDNA sequence for J1-24
SEQ ID NO: 21 is the determined 3' cDNA sequence for J1-24
SEQ ID NO: 22 is the determined 5' cDNA sequence for K1-58
SEQ ID NO: 23 is the determined 3' cDNA sequence for K1-58
SEQ ID NO: 24 is the determined 5' cDNA sequence for K1-63
SEQ ID NO: 25 is the determined 3' cDNA sequence for K1-63
SEQ ID NO: 26 is the determined 5' cDNA sequence for L1-4
SEQ ID NO: 27 is the determined 3' cDNA sequence for L1-4
SEQ ID NO: 28 is the determined 5' cDNA sequence for L1-14
SEQ ID NO: 29 is the determined 3' cDNA sequence for L1-14
SEQ ID NO: 30 is the determined 3' cDNA sequence for J1-12
SEQ ID NO: 31 is the determined 3' cDNA sequence for J1-16
SEQ ID NO: 32 is the determined 3' cDNA sequence for J1-21
SEQ ID NO: 33 is the determined 3' cDNA sequence for K1-48
SEQ ID NO: 34 is the determined 3' cDNA sequence for K1-55
SEQ ID NO: 35 is the determined 3' cDNA sequence for L1-2
SEQ ID NO: 36 is the determined 3' cDNA sequence for L1-6
SEQ ID NO: 37 is the determined 3' cDNA sequence for N1-1858
SEQ ID NO: 38 is the determined 3' cDNA sequence for N1-1860
SEQ ID NO: 39 is the determined 3' cDNA sequence for N1-1861

SEQ ID NO: 40 is the determined 3' cDNA sequence for N1-1864
SEQ ID NO: 41 is the determined cDNA sequence for P5
SEQ ID NO: 42 is the determined cDNA sequence for P8
SEQ ID NO: 43 is the determined cDNA sequence for P9
SEQ ID NO: 44 is the determined cDNA sequence for P18
SEQ ID NO: 45 is the determined cDNA sequence for P20
SEQ ID NO: 46 is the determined cDNA sequence for P29
SEQ ID NO: 47 is the determined cDNA sequence for P30
SEQ ID NO: 48 is the determined cDNA sequence for P34
SEQ ID NO: 49 is the determined cDNA sequence for P36
SEQ ID NO: 50 is the determined cDNA sequence for P38
SEQ ID NO: 51 is the determined cDNA sequence for P39
SEQ ID NO: 52 is the determined cDNA sequence for P42
SEQ ID NO: 53 is the determined cDNA sequence for P47
SEQ ID NO: 54 is the determined cDNA sequence for P49
SEQ ID NO: 55 is the determined cDNA sequence for P50
SEQ ID NO: 56 is the determined cDNA sequence for P53
SEQ ID NO: 57 is the determined cDNA sequence for P55
SEQ ID NO: 58 is the determined cDNA sequence for P60
SEQ ID NO: 59 is the determined cDNA sequence for P64
SEQ ID NO: 60 is the determined cDNA sequence for P65
SEQ ID NO: 61 is the determined cDNA sequence for P73
SEQ ID NO: 62 is the determined cDNA sequence for P75
SEQ ID NO: 63 is the determined cDNA sequence for P76
SEQ ID NO: 64 is the determined cDNA sequence for P79
SEQ ID NO: 65 is the determined cDNA sequence for P84
SEQ ID NO: 66 is the determined cDNA sequence for P68
SEQ ID NO: 67 is the determined cDNA sequence for P80
SEQ ID NO: 68 is the determined cDNA sequence for P82
SEQ ID NO: 69 is the determined cDNA sequence for U1-3064
SEQ ID NO: 70 is the determined cDNA sequence for U1-3065
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SEQ ID NO: 72 is the determined cDNA sequence for 1A-3905
SEQ ID NO: 73 is the determined cDNA sequence for V1-3686
SEQ ID NO: 74 is the determined cDNA sequence for R1-2330
SEQ ID NO: 75 is the determined cDNA sequence for 1B-3976
SEQ ID NO: 76 is the determined cDNA sequence for V1-3679

SEQ ID NO: 77 is the determined cDNA sequence for 1G-4736
SEQ ID NO: 78 is the determined cDNA sequence for 1G-4738
SEQ ID NO: 79 is the determined cDNA sequence for 1G-4741
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SEQ ID NO: 81 is the determined cDNA sequence for 1G-4734
SEQ ID NO: 82 is the determined cDNA sequence for 1H-4774
SEQ ID NO: 83 is the determined cDNA sequence for 1H-4781
SEQ ID NO: 84 is the determined cDNA sequence for 1H-4785
SEQ ID NO: 85 is the determined cDNA sequence for 1H-4787
SEQ ID NO: 86 is the determined cDNA sequence for 1H-4796
SEQ ID NO: 87 is the determined cDNA sequence for 1I-4807
SEQ ID NO: 88 is the determined cDNA sequence for 1I-4810
SEQ ID NO: 89 is the determined cDNA sequence for 1I-4811
SEQ ID NO: 90 is the determined cDNA sequence for 1J-4876
SEQ ID NO: 91 is the determined cDNA sequence for 1K-4884
SEQ ID NO: 92 is the determined cDNA sequence for 1K-4896
SEQ ID NO: 93 is the determined cDNA sequence for 1G-4761
SEQ ID NO: 94 is the determined cDNA sequence for 1G-4762
SEQ ID NO: 95 is the determined cDNA sequence for 1H-4766
SEQ ID NO: 96 is the determined cDNA sequence for 1H-4770
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SEQ ID NO: 106 is the determined cDNA sequence for 1D-4280
SEQ ID NO: 107 is the determined full length cDNA sequence for F1-12 (also referred to as P504S)
SEQ ID NO: 108 is the predicted amino acid sequence for F1-12
SEQ ID NO: 109 is the determined full length cDNA sequence for J1-17
SEQ ID NO: 110 is the determined full length cDNA sequence for L1-12
SEQ ID NO: 111 is the determined full length cDNA sequence for N1-1862
SEQ ID NO: 112 is the predicted amino acid sequence for J1-17

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SEQ ID NO: 133 is the determined cDNA sequence for P156
SEQ ID NO: 134 is the determined cDNA sequence for P157
SEQ ID NO: 135 is the determined cDNA sequence for P166
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SEQ ID NO: 165 is the determined cDNA sequence for P195
SEQ ID NO: 166 is the determined cDNA sequence for P196
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SEQ ID NO: 169 is the determined cDNA sequence for P235
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SEQ ID NO: 185 is the determined extended cDNA sequence for 1H-4785
SEQ ID NO: 186 is the determined extended cDNA sequence for 1H-4787

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SEQ ID NO: 194 is the determined extended cDNA sequence for 1G-4761
SEQ ID NO: 195 is the determined extended cDNA sequence for 1G-4762
SEQ ID NO: 196 is the determined extended cDNA sequence for 1H-4766
SEQ ID NO: 197 is the determined 3' cDNA sequence for 1H-4770
SEQ ID NO: 198 is the determined 3' cDNA sequence for 1H-4771
SEQ ID NO: 199 is the determined extended cDNA sequence for 1H-4772
SEQ ID NO: 200 is the determined extended cDNA sequence for 1D-4309
SEQ ID NO: 201 is the determined extended cDNA sequence for 1D.1-4278
SEQ ID NO: 202 is the determined extended cDNA sequence for 1D-4288
SEQ ID NO: 203 is the determined extended cDNA sequence for 1D-4283
SEQ ID NO: 204 is the determined extended cDNA sequence for 1D-4304
SEQ ID NO: 205 is the determined extended cDNA sequence for 1D-4296
SEQ ID NO: 206 is the determined extended cDNA sequence for 1D-4280
SEQ ID NO: 207 is the determined cDNA sequence for 10-d8fwd
SEQ ID NO: 208 is the determined cDNA sequence for 10-H10con
SEQ ID NO: 209 is the determined cDNA sequence for 11-C8rev
SEQ ID NO: 210 is the determined cDNA sequence for 7.g6fwd
SEQ ID NO: 211 is the determined cDNA sequence for 7.g6rev
SEQ ID NO: 212 is the determined cDNA sequence for 8-b5fwd
SEQ ID NO: 213 is the determined cDNA sequence for 8-b5rev
SEQ ID NO: 214 is the determined cDNA sequence for 8-b6fwd
SEQ ID NO: 215 is the determined cDNA sequence for 8-b6 rev
SEQ ID NO: 216 is the determined cDNA sequence for 8-d4fwd
SEQ ID NO: 217 is the determined cDNA sequence for 8-d9rev
SEQ ID NO: 218 is the determined cDNA sequence for 8-g3fwd
SEQ ID NO: 219 is the determined cDNA sequence for 8-g3rev
SEQ ID NO: 220 is the determined cDNA sequence for 8-h11rev
SEQ ID NO: 221 is the determined cDNA sequence for g-f12fwd
SEQ ID NO: 222 is the determined cDNA sequence for g-f3rev
SEQ ID NO: 223 is the determined cDNA sequence for P509S

SEQ ID NO: 224 is the determined cDNA sequence for P510S
SEQ ID NO: 225 is the determined cDNA sequence for P703DE5
SEQ ID NO: 226 is the determined cDNA sequence for 9-A11
SEQ ID NO: 227 is the determined cDNA sequence for 8-C6
SEQ ID NO: 228 is the determined cDNA sequence for 8-H7
SEQ ID NO: 229 is the determined cDNA sequence for JPTPN13
SEQ ID NO: 230 is the determined cDNA sequence for JPTPN14
SEQ ID NO: 231 is the determined cDNA sequence for JPTPN23
SEQ ID NO: 232 is the determined cDNA sequence for JPTPN24
SEQ ID NO: 233 is the determined cDNA sequence for JPTPN25
SEQ ID NO: 234 is the determined cDNA sequence for JPTPN30
SEQ ID NO: 235 is the determined cDNA sequence for JPTPN34
SEQ ID NO: 236 is the determined cDNA sequence for PTPN35
SEQ ID NO: 237 is the determined cDNA sequence for JPTPN36
SEQ ID NO: 238 is the determined cDNA sequence for JPTPN38
SEQ ID NO: 239 is the determined cDNA sequence for JPTPN39
SEQ ID NO: 240 is the determined cDNA sequence for JPTPN40
SEQ ID NO: 241 is the determined cDNA sequence for JPTPN41
SEQ ID NO: 242 is the determined cDNA sequence for JPTPN42
SEQ ID NO: 243 is the determined cDNA sequence for JPTPN45
SEQ ID NO: 244 is the determined cDNA sequence for JPTPN46
SEQ ID NO: 245 is the determined cDNA sequence for JPTPN51
SEQ ID NO: 246 is the determined cDNA sequence for JPTPN56
SEQ ID NO: 247 is the determined cDNA sequence for PTPN64
SEQ ID NO: 248 is the determined cDNA sequence for JPTPN65
SEQ ID NO: 249 is the determined cDNA sequence for JPTPN67
SEQ ID NO: 250 is the determined cDNA sequence for JPTPN76
SEQ ID NO: 251 is the determined cDNA sequence for JPTPN84
SEQ ID NO: 252 is the determined cDNA sequence for JPTPN85
SEQ ID NO: 253 is the determined cDNA sequence for JPTPN86
SEQ ID NO: 254 is the determined cDNA sequence for JPTPN87
SEQ ID NO: 255 is the determined cDNA sequence for JPTPN88
SEQ ID NO: 256 is the determined cDNA sequence for JP1F1
SEQ ID NO: 257 is the determined cDNA sequence for JP1F2
SEQ ID NO: 258 is the determined cDNA sequence for JP1C2
SEQ ID NO: 259 is the determined cDNA sequence for JP1B1
SEQ ID NO: 260 is the determined cDNA sequence for JP1B2

SEQ ID NO: 261 is the determined cDNA sequence for JP1D3
SEQ ID NO: 262 is the determined cDNA sequence for JP1A4
SEQ ID NO: 263 is the determined cDNA sequence for JP1F5
SEQ ID NO: 264 is the determined cDNA sequence for JP1E6
SEQ ID NO: 265 is the determined cDNA sequence for JP1D6
SEQ ID NO: 266 is the determined cDNA sequence for JP1B5
SEQ ID NO: 267 is the determined cDNA sequence for JP1A6
SEQ ID NO: 268 is the determined cDNA sequence for JP1E8
SEQ ID NO: 269 is the determined cDNA sequence for JP1D7
SEQ ID NO: 270 is the determined cDNA sequence for JP1D9
SEQ ID NO: 271 is the determined cDNA sequence for JP1C10
SEQ ID NO: 272 is the determined cDNA sequence for JP1A9
SEQ ID NO: 273 is the determined cDNA sequence for JP1F12
SEQ ID NO: 274 is the determined cDNA sequence for JP1E12
SEQ ID NO: 275 is the determined cDNA sequence for JP1D11
SEQ ID NO: 276 is the determined cDNA sequence for JP1C11
SEQ ID NO: 277 is the determined cDNA sequence for JP1C12
SEQ ID NO: 278 is the determined cDNA sequence for JP1B12
SEQ ID NO: 279 is the determined cDNA sequence for JP1A12
SEQ ID NO: 280 is the determined cDNA sequence for JP8G2
SEQ ID NO: 281 is the determined cDNA sequence for JP8H1
SEQ ID NO: 282 is the determined cDNA sequence for JP8H2
SEQ ID NO: 283 is the determined cDNA sequence for JP8A3
SEQ ID NO: 284 is the determined cDNA sequence for JP8A4
SEQ ID NO: 285 is the determined cDNA sequence for JP8C3
SEQ ID NO: 286 is the determined cDNA sequence for JP8G4
SEQ ID NO: 287 is the determined cDNA sequence for JP8B6
SEQ ID NO: 288 is the determined cDNA sequence for JP8D6
SEQ ID NO: 289 is the determined cDNA sequence for JP8F5
SEQ ID NO: 290 is the determined cDNA sequence for JP8A8
SEQ ID NO: 291 is the determined cDNA sequence for JP8C7
SEQ ID NO: 292 is the determined cDNA sequence for JP8D7
SEQ ID NO: 293 is the determined cDNA sequence for P8D8
SEQ ID NO: 294 is the determined cDNA sequence for JP8E7
SEQ ID NO: 295 is the determined cDNA sequence for JP8F8
SEQ ID NO: 296 is the determined cDNA sequence for JP8G8
SEQ ID NO: 297 is the determined cDNA sequence for JP8B10

SEQ ID NO: 298 is the determined cDNA sequence for JP8C10
SEQ ID NO: 299 is the determined cDNA sequence for JP8E9
SEQ ID NO: 300 is the determined cDNA sequence for JP8E10
SEQ ID NO: 301 is the determined cDNA sequence for JP8F9
SEQ ID NO: 302 is the determined cDNA sequence for JP8H9
SEQ ID NO: 303 is the determined cDNA sequence for JP8C12
SEQ ID NO: 304 is the determined cDNA sequence for JP8E11
SEQ ID NO: 305 is the determined cDNA sequence for JP8E12
SEQ ID NO: 306 is the amino acid sequence for the peptide PS2#12
SEQ ID NO: 307 is the determined cDNA sequence for P711P
SEQ ID NO: 308 is the determined cDNA sequence for P712P
SEQ ID NO: 309 is the determined cDNA sequence for CLONE23
SEQ ID NO: 310 is the determined cDNA sequence for P774P
SEQ ID NO: 311 is the determined cDNA sequence for P775P
SEQ ID NO: 312 is the determined cDNA sequence for P715P
SEQ ID NO: 313 is the determined cDNA sequence for P710P
SEQ ID NO: 314 is the determined cDNA sequence for P767P
SEQ ID NO: 315 is the determined cDNA sequence for P768P
SEQ ID NO: 316-325 are the determined cDNA sequences of previously isolated genes
SEQ ID NO: 326 is the determined cDNA sequence for P703PDE5
SEQ ID NO: 327 is the predicted amino acid sequence for P703PDE5
SEQ ID NO: 328 is the determined cDNA sequence for P703P6.26
SEQ ID NO: 329 is the predicted amino acid sequence for P703P6.26
SEQ ID NO: 330 is the determined cDNA sequence for P703PX-23
SEQ ID NO: 331 is the predicted amino acid sequence for P703PX-23
SEQ ID NO: 332 is the determined full length cDNA sequence for P509S
SEQ ID NO: 333 is the determined extended cDNA sequence for P707P (also referred to as 11-C9)
SEQ ID NO: 334 is the determined cDNA sequence for P714P
SEQ ID NO: 335 is the determined cDNA sequence for P705P (also referred to as 9-F3)
SEQ ID NO: 336 is the predicted amino acid sequence for P705P
SEQ ID NO: 337 is the amino acid sequence of the peptide P1S#10
SEQ ID NO: 338 is the amino acid sequence of the peptide p5
SEQ ID NO: 339 is the predicted amino acid sequence of P509S
SEQ ID NO: 340 is the determined cDNA sequence for P778P
SEQ ID NO: 341 is the determined cDNA sequence for P786P
SEQ ID NO: 342 is the determined cDNA sequence for P789P

SEQ ID NO: 343 is the determined cDNA sequence for a clone showing homology to Homo sapiens MM46 mRNA

SEQ ID NO: 344 is the determined cDNA sequence for a clone showing homology to Homo sapiens TNF-alpha stimulated ABC protein (ABC50) mRNA

SEQ ID NO: 345 is the determined cDNA sequence for a clone showing homology to Homo sapiens mRNA for E-cadherin

SEQ ID NO: 346 is the determined cDNA sequence for a clone showing homology to Human nuclear-encoded mitochondrial serine hydroxymethyltransferase (SHMT)

SEQ ID NO: 347 is the determined cDNA sequence for a clone showing homology to Homo sapiens natural resistance-associated macrophage protein2 (NRAMP2)

SEQ ID NO: 348 is the determined cDNA sequence for a clone showing homology to Homo sapiens phosphoglucomutase-related protein (PGMRP)

SEQ ID NO: 349 is the determined cDNA sequence for a clone showing homology to Human mRNA for proteosome subunit p40

SEQ ID NO: 350 is the determined cDNA sequence for P777P

SEQ ID NO: 351 is the determined cDNA sequence for P779P

SEQ ID NO: 352 is the determined cDNA sequence for P790P

SEQ ID NO: 353 is the determined cDNA sequence for P784P

SEQ ID NO: 354 is the determined cDNA sequence for P776P

SEQ ID NO: 355 is the determined cDNA sequence for P780P

SEQ ID NO: 356 is the determined cDNA sequence for P544S

SEQ ID NO: 357 is the determined cDNA sequence for P745S

SEQ ID NO: 358 is the determined cDNA sequence for P782P

SEQ ID NO: 359 is the determined cDNA sequence for P783P

SEQ ID NO: 360 is the determined cDNA sequence for unknown 17984

SEQ ID NO: 361 is the determined cDNA sequence for P787P

SEQ ID NO: 362 is the determined cDNA sequence for P788P

SEQ ID NO: 363 is the determined cDNA sequence for unknown 17994

SEQ ID NO: 364 is the determined cDNA sequence for P781P

SEQ ID NO: 365 is the determined cDNA sequence for P785P

SEQ ID NO: 366-375 are the determined cDNA sequences for splice variants of B305D.

SEQ ID NO: 376 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 366.

SEQ ID NO: 377 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 372.

SEQ ID NO: 378 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 373.

SEQ ID NO: 379 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 374.

SEQ ID NO: 380 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 375.

SEQ ID NO: 381 is the determined cDNA sequence for B716P.

SEQ ID NO: 382 is the determined full-length cDNA sequence for P711P.

SEQ ID NO: 383 is the predicted amino acid sequence for P711P.

SEQ ID NO: 384 is the cDNA sequence for P1000C.

SEQ ID NO: 385 is the cDNA sequence for CGI-82.

SEQ ID NO:386 is the cDNA sequence for 23320.

SEQ ID NO:387 is the cDNA sequence for CGI-69.

SEQ ID NO:388 is the cDNA sequence for L-iditol-2-dehydrogenase.

SEQ ID NO:389 is the cDNA sequence for 23379.

SEQ ID NO:390 is the cDNA sequence for 23381.

SEQ ID NO:391 is the cDNA sequence for KIAA0122.

SEQ ID NO:392 is the cDNA sequence for 23399.

SEQ ID NO:393 is the cDNA sequence for a previously identified gene.

SEQ ID NO:394 is the cDNA sequence for HCLBP.

SEQ ID NO:395 is the cDNA sequence for transglutaminase.

SEQ ID NO:396 is the cDNA sequence for a previously identified gene.

SEQ ID NO:397 is the cDNA sequence for PAP.

SEQ ID NO:398 is the cDNA sequence for Ets transcription factor PDEF.

SEQ ID NO:399 is the cDNA sequence for hTGR.

SEQ ID NO:400 is the cDNA sequence for KIAA0295.

SEQ ID NO:401 is the cDNA sequence for 22545.

SEQ ID NO:402 is the cDNA sequence for 22547.

SEQ ID NO:403 is the cDNA sequence for 22548.

SEQ ID NO:404 is the cDNA sequence for 22550.

SEQ ID NO:405 is the cDNA sequence for 22551.

SEQ ID NO:406 is the cDNA sequence for 22552.

SEQ ID NO:407 is the cDNA sequence for 22553.

SEQ ID NO:408 is the cDNA sequence for 22558.

SEQ ID NO:409 is the cDNA sequence for 22562.

SEQ ID NO:410 is the cDNA sequence for 22565.

SEQ ID NO:411 is the cDNA sequence for 22567.

SEQ ID NO:412 is the cDNA sequence for 22568.

SEQ ID NO:413 is the cDNA sequence for 22570.

SEQ ID NO:414 is the cDNA sequence for 22571.
SEQ ID NO:415 is the cDNA sequence for 22572.
SEQ ID NO:416 is the cDNA sequence for 22573.
SEQ ID NO:417 is the cDNA sequence for 22573.
SEQ ID NO:418 is the cDNA sequence for 22575.
SEQ ID NO:419 is the cDNA sequence for 22580.
SEQ ID NO:420 is the cDNA sequence for 22581.
SEQ ID NO:421 is the cDNA sequence for 22582.
SEQ ID NO:422 is the cDNA sequence for 22583.
SEQ ID NO:423 is the cDNA sequence for 22584.
SEQ ID NO:424 is the cDNA sequence for 22585.
SEQ ID NO:425 is the cDNA sequence for 22586.
SEQ ID NO:426 is the cDNA sequence for 22587.
SEQ ID NO:427 is the cDNA sequence for 22588.
SEQ ID NO:428 is the cDNA sequence for 22589.
SEQ ID NO:429 is the cDNA sequence for 22590.
SEQ ID NO:430 is the cDNA sequence for 22591.
SEQ ID NO:431 is the cDNA sequence for 22592.
SEQ ID NO:432 is the cDNA sequence for 22593.
SEQ ID NO:433 is the cDNA sequence for 22594.
SEQ ID NO:434 is the cDNA sequence for 22595.
SEQ ID NO:435 is the cDNA sequence for 22596.
SEQ ID NO:436 is the cDNA sequence for 22847.
SEQ ID NO:437 is the cDNA sequence for 22848.
SEQ ID NO:438 is the cDNA sequence for 22849.
SEQ ID NO:439 is the cDNA sequence for 22851.
SEQ ID NO:440 is the cDNA sequence for 22852.
SEQ ID NO:441 is the cDNA sequence for 22853.
SEQ ID NO:442 is the cDNA sequence for 22854.
SEQ ID NO:443 is the cDNA sequence for 22855.
SEQ ID NO:444 is the cDNA sequence for 22856.
SEQ ID NO:445 is the cDNA sequence for 22857.
SEQ ID NO:446 is the cDNA sequence for 23601.
SEQ ID NO:447 is the cDNA sequence for 23602.
SEQ ID NO:448 is the cDNA sequence for 23605.
SEQ ID NO:449 is the cDNA sequence for 23606.
SEQ ID NO:450 is the cDNA sequence for 23612.

SEQ ID NO:451 is the cDNA sequence for 23614.
SEQ ID NO:452 is the cDNA sequence for 23618.
SEQ ID NO:453 is the cDNA sequence for 23622.
SEQ ID NO:454 is the cDNA sequence for folate hydrolase.
SEQ ID NO:455 is the cDNA sequence for LIM protein.
SEQ ID NO:456 is the cDNA sequence for a known gene.
SEQ ID NO:457 is the cDNA sequence for a known gene.
SEQ ID NO:458 is the cDNA sequence for a previously identified gene.
SEQ ID NO:459 is the cDNA sequence for 23045.
SEQ ID NO:460 is the cDNA sequence for 23032.
SEQ ID NO:461 is the cDNA sequence for 23054.
SEQ ID NOs:462-467 are cDNA sequences for known genes.
SEQ ID NOs:468-471 are cDNA sequences for P710P.
SEQ ID NO:472 is a cDNA sequence for P1001C.

DETAILED DESCRIPTION OF THE INVENTION

As noted above, the present invention is generally directed to compositions and methods for the therapy and diagnosis of cancer, such as prostate cancer. The compositions described herein may include prostate tumor polypeptides, polynucleotides encoding such polypeptides, binding agents such as antibodies, antigen presenting cells (APCs) and/or immune system cells (*e.g.*, T cells). Polypeptides of the present invention generally comprise at least a portion (such as an immunogenic portion) of a prostate tumor protein or a variant thereof. A "prostate tumor protein" is a protein that is expressed in prostate tumor cells at a level that is at least two fold, and preferably at least five fold, greater than the level of expression in a normal tissue, as determined using a representative assay provided herein. Certain prostate tumor proteins are tumor proteins that react detectably (within an immunoassay, such as an ELISA or Western blot) with antisera of a patient afflicted with prostate cancer. Polynucleotides of the subject invention generally comprise a DNA or RNA sequence that encodes all or a portion of such a polypeptide, or that is complementary to such a sequence. Antibodies are generally immune system proteins, or antigen-binding fragments thereof, that are capable of binding to a polypeptide as described above. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B-cells that express a polypeptide as described above. T cells that may be employed within such compositions are generally T cells that are specific for a polypeptide as described above.

The present invention is based on the discovery of human prostate tumor proteins. Sequences of polynucleotides encoding certain tumor proteins, or portions thereof, are provided in SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472. Sequences of polypeptides comprising at least a portion of a tumor protein are provided in SEQ ID NOs:112-114, 172, 176, 178, 327, 329, 331, 336, 339, 376-380 and 383.

PROSTATE TUMOR PROTEIN POLYNUCLEOTIDES

Any polynucleotide that encodes a prostate tumor protein or a portion or other variant thereof as described herein is encompassed by the present invention. Preferred polynucleotides comprise at least 15 consecutive nucleotides, preferably at least 30 consecutive nucleotides and more preferably at least 45 consecutive nucleotides, that encode a portion of a prostate tumor protein. More preferably, a polynucleotide encodes an immunogenic portion of a prostate tumor protein. Polynucleotides complementary to any such sequences are also encompassed by the present invention. Polynucleotides may be single-stranded (coding or antisense) or double-stranded, and may be DNA (genomic, cDNA or synthetic) or RNA molecules. RNA molecules include HnRNA molecules, which contain introns and correspond to a DNA molecule in a one-to-one manner, and mRNA molecules, which do not contain introns. Additional coding or non-coding sequences may, but need not, be present within a polynucleotide of the present invention, and a polynucleotide may, but need not, be linked to other molecules and/or support materials.

Polynucleotides may comprise a native sequence (*i.e.*, an endogenous sequence that encodes a prostate tumor protein or a portion thereof) or may comprise a variant of such a sequence. Polynucleotide variants may contain one or more substitutions, additions, deletions and/or insertions such that the immunogenicity of the encoded polypeptide is not diminished, relative to a native tumor protein. The effect on the immunogenicity of the encoded polypeptide may generally be assessed as described herein. Variants preferably exhibit at least about 70% identity, more preferably at least about 80% identity and most preferably at least about 90% identity to a polynucleotide sequence that encodes a native prostate tumor protein or a portion thereof.

Two polynucleotide or polypeptide sequences are said to be "identical" if the sequence of nucleotides or amino acids in the two sequences is the same when aligned for maximum correspondence as described below. Comparisons between two sequences are typically performed by comparing the sequences over a comparison window to identify and compare local regions of sequence similarity. A "comparison window" as used herein, refers to a segment of at least about 20 contiguous positions, usually 30 to about 75, 40 to about 50,

in which a sequence may be compared to a reference sequence of the same number of contiguous positions after the two sequences are optimally aligned.

Optimal alignment of sequences for comparison may be conducted using the Megalign program in the Lasergene suite of bioinformatics software (DNASTAR, Inc., Madison, WI), using default parameters. This program embodies several alignment schemes described in the following references: Dayhoff, M.O. (1978) A model of evolutionary change in proteins – Matrices for detecting distant relationships. In Dayhoff, M.O. (ed.) *Atlas of Protein Sequence and Structure*, National Biomedical Research Foundation, Washington DC Vol. 5, Suppl. 3, pp. 345-358; Hein J. (1990) Unified Approach to Alignment and Phylogenesis pp. 626-645 *Methods in Enzymology* vol. 183, Academic Press, Inc., San Diego, CA; Higgins, D.G. and Sharp, P.M. (1989) *CABIOS* 5:151-153; Myers, E.W. and Muller W. (1988) *CABIOS* 4:11-17; Robinson, E.D. (1971) *Comb. Theor* 11:105; Santou, N. Nes, M. (1987) *Mol. Biol. Evol.* 4:406-425; Sneath, P.H.A. and Sokal, R.R. (1973) *Numerical Taxonomy – the Principles and Practice of Numerical Taxonomy*, Freeman Press, San Francisco, CA; Wilbur, W.J. and Lipman, D.J. (1983) *Proc. Natl. Acad., Sci. USA* 80:726-730.

Preferably, the “percentage of sequence identity” is determined by comparing two optimally aligned sequences over a window of comparison of at least 20 positions, wherein the portion of the polynucleotide or polypeptide sequence in the comparison window may comprise additions or deletions (*i.e.*, gaps) of 20 percent or less, usually 5 to 15 percent, or 10 to 12 percent, as compared to the reference sequences (which does not comprise additions or deletions) for optimal alignment of the two sequences. The percentage is calculated by determining the number of positions at which the identical nucleic acid bases or amino acid residue occurs in both sequences to yield the number of matched positions, dividing the number of matched positions by the total number of positions in the reference sequence (*i.e.*, the window size) and multiplying the results by 100 to yield the percentage of sequence identity.

Variants may also, or alternatively, be substantially homologous to a native gene, or a portion or complement thereof. Such polynucleotide variants are capable of hybridizing under moderately stringent conditions to a naturally occurring DNA sequence encoding a native prostate tumor protein (or a complementary sequence). Suitable moderately stringent conditions include prewashing in a solution of 5 X SSC, 0.5% SDS, 1.0 mM EDTA (pH 8.0); hybridizing at 50°C-65°C, 5 X SSC, overnight; followed by washing twice at 65°C for 20 minutes with each of 2X, 0.5X and 0.2X SSC containing 0.1% SDS.

It will be appreciated by those of ordinary skill in the art that, as a result of the degeneracy of the genetic code, there are many nucleotide sequences that encode a polypeptide as described herein. Some of these polynucleotides bear minimal homology to

the nucleotide sequence of any native gene. Nonetheless, polynucleotides that vary due to differences in codon usage are specifically contemplated by the present invention. Further, alleles of the genes comprising the polynucleotide sequences provided herein are within the scope of the present invention. Alleles are endogenous genes that are altered as a result of one or more mutations, such as deletions, additions and/or substitutions of nucleotides. The resulting mRNA and protein may, but need not, have an altered structure or function. Alleles may be identified using standard techniques (such as hybridization, amplification and/or database sequence comparison).

Polynucleotides may be prepared using any of a variety of techniques. For example, a polynucleotide may be identified, as described in more detail below, by screening a microarray of cDNAs for tumor-associated expression (*i.e.*, expression that is at least five fold greater in a prostate tumor than in normal tissue, as determined using a representative assay provided herein). Such screens may be performed using a Synteni microarray (Palo Alto, CA) according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997). Alternatively, polypeptides may be amplified from cDNA prepared from cells expressing the proteins described herein, such as prostate tumor cells. Such polynucleotides may be amplified via polymerase chain reaction (PCR). For this approach, sequence-specific primers may be designed based on the sequences provided herein, and may be purchased or synthesized.

An amplified portion may be used to isolate a full length gene from a suitable library (*e.g.*, a prostate tumor cDNA library) using well known techniques. Within such techniques, a library (cDNA or genomic) is screened using one or more polynucleotide probes or primers suitable for amplification. Preferably, a library is size-selected to include larger molecules. Random primed libraries may also be preferred for identifying 5' and upstream regions of genes. Genomic libraries are preferred for obtaining introns and extending 5' sequences.

For hybridization techniques, a partial sequence may be labeled (*e.g.*, by nick-translation or end-labeling with ^{32}P) using well known techniques. A bacterial or bacteriophage library is then screened by hybridizing filters containing denatured bacterial colonies (or lawns containing phage plaques) with the labeled probe (*see* Sambrook et al., *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, 1989). Hybridizing colonies or plaques are selected and expanded, and the DNA is isolated for further analysis. cDNA clones may be analyzed to determine the amount of additional sequence by, for example, PCR using a primer from the partial sequence and a primer from the vector. Restriction maps and partial sequences may be generated to identify one or more overlapping clones. The complete sequence may then be determined using

standard techniques, which may involve generating a series of deletion clones. The resulting overlapping sequences are then assembled into a single contiguous sequence. A full length cDNA molecule can be generated by ligating suitable fragments, using well known techniques.

Alternatively, there are numerous amplification techniques for obtaining a full length coding sequence from a partial cDNA sequence. Within such techniques, amplification is generally performed via PCR. Any of a variety of commercially available kits may be used to perform the amplification step. Primers may be designed using, for example, software well known in the art. Primers are preferably 22-30 nucleotides in length, have a GC content of at least 50% and anneal to the target sequence at temperatures of about 68°C to 72°C. The amplified region may be sequenced as described above, and overlapping sequences assembled into a contiguous sequence.

One such amplification technique is inverse PCR (*see* Triglia et al., *Nucl. Acids Res.* 16:8186, 1988), which uses restriction enzymes to generate a fragment in the known region of the gene. The fragment is then circularized by intramolecular ligation and used as a template for PCR with divergent primers derived from the known region. Within an alternative approach, sequences adjacent to a partial sequence may be retrieved by amplification with a primer to a linker sequence and a primer specific to a known region. The amplified sequences are typically subjected to a second round of amplification with the same linker primer and a second primer specific to the known region. A variation on this procedure, which employs two primers that initiate extension in opposite directions from the known sequence, is described in WO 96/38591. Another such technique is known as "rapid amplification of cDNA ends" or RACE. This technique involves the use of an internal primer and an external primer, which hybridizes to a polyA region or vector sequence, to identify sequences that are 5' and 3' of a known sequence. Additional techniques include capture PCR (Lagerstrom et al., *PCR Methods Applic.* 1:111-19, 1991) and walking PCR (Parker et al., *Nucl. Acids. Res.* 19:3055-60, 1991). Other methods employing amplification may also be employed to obtain a full length cDNA sequence.

In certain instances, it is possible to obtain a full length cDNA sequence by analysis of sequences provided in an expressed sequence tag (EST) database, such as that available from GenBank. Searches for overlapping ESTs may generally be performed using well known programs (*e.g.*, NCBI BLAST searches), and such ESTs may be used to generate a contiguous full length sequence.

Certain nucleic acid sequences of cDNA molecules encoding at least a portion of a prostate tumor protein are provided in SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472. Isolation of these

polynucleotides is described below. Each of these prostate tumor proteins was overexpressed in prostate tumor tissue.

Polynucleotide variants may generally be prepared by any method known in the art, including chemical synthesis by, for example, solid phase phosphoramidite chemical synthesis. Modifications in a polynucleotide sequence may also be introduced using standard mutagenesis techniques, such as oligonucleotide-directed site-specific mutagenesis (*see* Adelman et al., *DNA* 2:183, 1983). Alternatively, RNA molecules may be generated by *in vitro* or *in vivo* transcription of DNA sequences encoding a prostate tumor protein, or portion thereof, provided that the DNA is incorporated into a vector with a suitable RNA polymerase promoter (such as T7 or SP6). Certain portions may be used to prepare an encoded polypeptide, as described herein. In addition, or alternatively, a portion may be administered to a patient such that the encoded polypeptide is generated *in vivo* (e.g., by transfecting antigen-presenting cells, such as dendritic cells, with a cDNA construct encoding a prostate tumor polypeptide, and administering the transfected cells to the patient).

A portion of a sequence complementary to a coding sequence (*i.e.*, an antisense polynucleotide) may also be used as a probe or to modulate gene expression. cDNA constructs that can be transcribed into antisense RNA may also be introduced into cells of tissues to facilitate the production of antisense RNA. An antisense polynucleotide may be used, as described herein, to inhibit expression of a tumor protein. Antisense technology can be used to control gene expression through triple-helix formation, which compromises the ability of the double helix to open sufficiently for the binding of polymerases, transcription factors or regulatory molecules (*see* Gee et al., *In Huber and Carr, Molecular and Immunologic Approaches*, Futura Publishing Co. (Mt. Kisco, NY; 1994)). Alternatively, an antisense molecule may be designed to hybridize with a control region of a gene (e.g., promoter, enhancer or transcription initiation site), and block transcription of the gene; or to block translation by inhibiting binding of a transcript to ribosomes.

A portion of a coding sequence, or of a complementary sequence, may also be designed as a probe or primer to detect gene expression. Probes may be labeled with a variety of reporter groups, such as radionuclides and enzymes, and are preferably at least 10 nucleotides in length, more preferably at least 20 nucleotides in length and still more preferably at least 30 nucleotides in length. Primers, as noted above, are preferably 22-30 nucleotides in length.

Any polynucleotide may be further modified to increase stability *in vivo*. Possible modifications include, but are not limited to, the addition of flanking sequences at the 5' and/or 3' ends; the use of phosphorothioate or 2' O-methyl rather than phosphodiesterase linkages in the backbone; and/or the inclusion of nontraditional bases such

as inosine, queosine and wybutosine, as well as acetyl-, methyl-, thio- and other modified forms of adenine, cytidine, guanine, thymine and uridine.

Nucleotide sequences as described herein may be joined to a variety of other nucleotide sequences using established recombinant DNA techniques. For example, a polynucleotide may be cloned into any of a variety of cloning vectors, including plasmids, phagemids, lambda phage derivatives and cosmids. Vectors of particular interest include expression vectors, replication vectors, probe generation vectors and sequencing vectors. In general, a vector will contain an origin of replication functional in at least one organism, convenient restriction endonuclease sites and one or more selectable markers. Other elements will depend upon the desired use, and will be apparent to those of ordinary skill in the art.

Within certain embodiments, polynucleotides may be formulated so as to permit entry into a cell of a mammal, and expression therein. Such formulations are particularly useful for therapeutic purposes, as described below. Those of ordinary skill in the art will appreciate that there are many ways to achieve expression of a polynucleotide in a target cell, and any suitable method may be employed. For example, a polynucleotide may be incorporated into a viral vector such as, but not limited to, adenovirus, adeno-associated virus, retrovirus, or vaccinia or other pox virus (*e.g.*, avian pox virus). Techniques for incorporating DNA into such vectors are well known to those of ordinary skill in the art. A retroviral vector may additionally transfer or incorporate a gene for a selectable marker (to aid in the identification or selection of transduced cells) and/or a targeting moiety, such as a gene that encodes a ligand for a receptor on a specific target cell, to render the vector target specific. Targeting may also be accomplished using an antibody, by methods known to those of ordinary skill in the art.

Other formulations for therapeutic purposes include colloidal dispersion systems, such as macromolecule complexes, nanocapsules, microspheres, beads, and lipid-based systems including oil-in-water emulsions, micelles, mixed micelles, and liposomes. A preferred colloidal system for use as a delivery vehicle *in vitro* and *in vivo* is a liposome (*i.e.*, an artificial membrane vesicle). The preparation and use of such systems is well known in the art.

PROSTATE TUMOR POLYPEPTIDES

Within the context of the present invention, polypeptides may comprise at least an immunogenic portion of a prostate tumor protein or a variant thereof, as described herein. As noted above, a "prostate tumor protein" is a protein that is expressed by prostate tumor cells. Proteins that are prostate tumor proteins also react detectably within an immunoassay (such as an ELISA) with antisera from a patient with prostate cancer. Polypeptides as described herein may be of any length. Additional sequences derived from

the native protein and/or heterologous sequences may be present, and such sequences may (but need not) possess further immunogenic or antigenic properties.

An "immunogenic portion," as used herein is a portion of a protein that is recognized (*i.e.*, specifically bound) by a B-cell and/or T-cell surface antigen receptor. Such immunogenic portions generally comprise at least 5 amino acid residues, more preferably at least 10, and still more preferably at least 20 amino acid residues of a prostate tumor protein or a variant thereof. Certain preferred immunogenic portions include peptides in which an N-terminal leader sequence and/or transmembrane domain have been deleted. Other preferred immunogenic portions may contain a small N- and/or C-terminal deletion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids), relative to the mature protein.

Immunogenic portions may generally be identified using well known techniques, such as those summarized in Paul, *Fundamental Immunology*, 3rd ed., 243-247 (Raven Press, 1993) and references cited therein. Such techniques include screening polypeptides for the ability to react with antigen-specific antibodies, antisera and/or T-cell lines or clones. As used herein, antisera and antibodies are "antigen-specific" if they specifically bind to an antigen (*i.e.*, they react with the protein in an ELISA or other immunoassay, and do not react detectably with unrelated proteins). Such antisera and antibodies may be prepared as described herein, and using well known techniques. An immunogenic portion of a native prostate tumor protein is a portion that reacts with such antisera and/or T-cells at a level that is not substantially less than the reactivity of the full length polypeptide (*e.g.*, in an ELISA and/or T-cell reactivity assay). Such immunogenic portions may react within such assays at a level that is similar to or greater than the reactivity of the full length polypeptide. Such screens may generally be performed using methods well known to those of ordinary skill in the art, such as those described in Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. For example, a polypeptide may be immobilized on a solid support and contacted with patient sera to allow binding of antibodies within the sera to the immobilized polypeptide. Unbound sera may then be removed and bound antibodies detected using, for example, ¹²⁵I-labeled Protein A.

As noted above, a composition may comprise a variant of a native prostate tumor protein. A polypeptide "variant," as used herein, is a polypeptide that differs from a native prostate tumor protein in one or more substitutions, deletions, additions and/or insertions, such that the immunogenicity of the polypeptide is not substantially diminished. In other words, the ability of a variant to react with antigen-specific antisera may be enhanced or unchanged, relative to the native protein, or may be diminished by less than 50%, and preferably less than 20%, relative to the native protein. Such variants may generally be identified by modifying one of the above polypeptide sequences and evaluating the reactivity of the modified polypeptide with antigen-specific antibodies or antisera as described herein.

Preferred variants include those in which one or more portions, such as an N-terminal leader sequence or transmembrane domain, have been removed. Other preferred variants include variants in which a small portion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids) has been removed from the N- and/or C-terminal of the mature protein. Polypeptide variants preferably exhibit at least about 70%, more preferably at least about 90% and most preferably at least about 95% identity (determined as described above) to the identified polypeptides.

Preferably, a variant contains conservative substitutions. A "conservative substitution" is one in which an amino acid is substituted for another amino acid that has similar properties, such that one skilled in the art of peptide chemistry would expect the secondary structure and hydropathic nature of the polypeptide to be substantially unchanged. Amino acid substitutions may generally be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity and/or the amphipathic nature of the residues. For example, negatively charged amino acids include aspartic acid and glutamic acid; positively charged amino acids include lysine and arginine; and amino acids with uncharged polar head groups having similar hydrophilicity values include leucine, isoleucine and valine; glycine and alanine; asparagine and glutamine; and serine, threonine, phenylalanine and tyrosine. Other groups of amino acids that may represent conservative changes include: (1) ala, pro, gly, glu, asp, gln, asn, ser, thr; (2) cys, ser, tyr, thr; (3) val, ile, leu, met, ala, phe; (4) lys, arg, his; and (5) phe, tyr, trp, his. A variant may also, or alternatively, contain nonconservative changes. In a preferred embodiment, variant polypeptides differ from a native sequence by substitution, deletion or addition of five amino acids or fewer. Variants may also (or alternatively) be modified by, for example, the deletion or addition of amino acids that have minimal influence on the immunogenicity, secondary structure and hydropathic nature of the polypeptide.

As noted above, polypeptides may comprise a signal (or leader) sequence at the N-terminal end of the protein which co-translationally or post-translationally directs transfer of the protein. The polypeptide may also be conjugated to a linker or other sequence for ease of synthesis, purification or identification of the polypeptide (*e.g.*, poly-His), or to enhance binding of the polypeptide to a solid support. For example, a polypeptide may be conjugated to an immunoglobulin Fc region.

Polypeptides may be prepared using any of a variety of well known techniques. Recombinant polypeptides encoded by DNA sequences as described above may be readily prepared from the DNA sequences using any of a variety of expression vectors known to those of ordinary skill in the art. Expression may be achieved in any appropriate host cell that has been transformed or transfected with an expression vector containing a DNA molecule that encodes a recombinant polypeptide. Suitable host cells include prokaryotes, yeast and higher eukaryotic cells. Preferably, the host cells employed are

E. coli, yeast or a mammalian cell line such as COS or CHO. Supernatants from suitable host/vector systems which secrete recombinant protein or polypeptide into culture media may be first concentrated using a commercially available filter. Following concentration, the concentrate may be applied to a suitable purification matrix such as an affinity matrix or an ion exchange resin. Finally, one or more reverse phase HPLC steps can be employed to further purify a recombinant polypeptide.

Portions and other variants having fewer than about 100 amino acids, and generally fewer than about 50 amino acids, may also be generated by synthetic means, using techniques well known to those of ordinary skill in the art. For example, such polypeptides may be synthesized using any of the commercially available solid-phase techniques, such as the Merrifield solid-phase synthesis method, where amino acids are sequentially added to a growing amino acid chain. See Merrifield, *J. Am. Chem. Soc.* 85:2149-2146, 1963. Equipment for automated synthesis of polypeptides is commercially available from suppliers such as Perkin Elmer/Applied BioSystems Division (Foster City, CA), and may be operated according to the manufacturer's instructions.

Within certain specific embodiments, a polypeptide may be a fusion protein that comprises multiple polypeptides as described herein, or that comprises at least one polypeptide as described herein and an unrelated sequence, such as a known tumor protein. A fusion partner may, for example, assist in providing T helper epitopes (an immunological fusion partner), preferably T helper epitopes recognized by humans, or may assist in expressing the protein (an expression enhancer) at higher yields than the native recombinant protein. Certain preferred fusion partners are both immunological and expression enhancing fusion partners. Other fusion partners may be selected so as to increase the solubility of the protein or to enable the protein to be targeted to desired intracellular compartments. Still further fusion partners include affinity tags, which facilitate purification of the protein.

Fusion proteins may generally be prepared using standard techniques, including chemical conjugation. Preferably, a fusion protein is expressed as a recombinant protein, allowing the production of increased levels, relative to a non-fused protein, in an expression system. Briefly, DNA sequences encoding the polypeptide components may be assembled separately, and ligated into an appropriate expression vector. The 3' end of the DNA sequence encoding one polypeptide component is ligated, with or without a peptide linker, to the 5' end of a DNA sequence encoding the second polypeptide component so that the reading frames of the sequences are in phase. This permits translation into a single fusion protein that retains the biological activity of both component polypeptides.

A peptide linker sequence may be employed to separate the first and the second polypeptide components by a distance sufficient to ensure that each polypeptide folds into its secondary and tertiary structures. Such a peptide linker sequence is incorporated into

the fusion protein using standard techniques well known in the art. Suitable peptide linker sequences may be chosen based on the following factors: (1) their ability to adopt a flexible extended conformation; (2) their inability to adopt a secondary structure that could interact with functional epitopes on the first and second polypeptides; and (3) the lack of hydrophobic or charged residues that might react with the polypeptide functional epitopes. Preferred peptide linker sequences contain Gly, Asn and Ser residues. Other near neutral amino acids, such as Thr and Ala may also be used in the linker sequence. Amino acid sequences which may be usefully employed as linkers include those disclosed in Maratea et al., *Gene* 40:39-46, 1985; Murphy et al., *Proc. Natl. Acad. Sci. USA* 83:8258-8262, 1986; U.S. Patent No. 4,935,233 and U.S. Patent No. 4,751,180. The linker sequence may generally be from 1 to about 50 amino acids in length. Linker sequences are not required when the first and second polypeptides have non-essential N-terminal amino acid regions that can be used to separate the functional domains and prevent steric interference.

The ligated DNA sequences are operably linked to suitable transcriptional or translational regulatory elements. The regulatory elements responsible for expression of DNA are located only 5' to the DNA sequence encoding the first polypeptides. Similarly, stop codons required to end translation and transcription termination signals are only present 3' to the DNA sequence encoding the second polypeptide.

Fusion proteins are also provided that comprise a polypeptide of the present invention together with an unrelated immunogenic protein. Preferably the immunogenic protein is capable of eliciting a recall response. Examples of such proteins include tetanus, tuberculosis and hepatitis proteins (*see*, for example, Stoute et al. *New Engl. J. Med.*, 336:86-91, 1997).

Within preferred embodiments, an immunological fusion partner is derived from protein D, a surface protein of the gram-negative bacterium *Haemophilus influenza B* (WO 91/18926). Preferably, a protein D derivative comprises approximately the first third of the protein (*e.g.*, the first N-terminal 100-110 amino acids), and a protein D derivative may be lipidated. Within certain preferred embodiments, the first 109 residues of a Lipoprotein D fusion partner is included on the N-terminus to provide the polypeptide with additional exogenous T-cell epitopes and to increase the expression level in *E. coli* (thus functioning as an expression enhancer). The lipid tail ensures optimal presentation of the antigen to antigen presenting cells. Other fusion partners include the non-structural protein from influenzae virus, NS1 (hemagglutinin). Typically, the N-terminal 81 amino acids are used, although different fragments that include T-helper epitopes may be used.

In another embodiment, the immunological fusion partner is the protein known as LYTA, or a portion thereof (preferably a C-terminal portion). LYTA is derived from *Streptococcus pneumoniae*, which synthesizes an N-acetyl-L-alanine amidase known as

amidase LYTA (encoded by the *LytA* gene; *Gene* 43:265-292, 1986). LYTA is an autolysin that specifically degrades certain bonds in the peptidoglycan backbone. The C-terminal domain of the LYTA protein is responsible for the affinity to the choline or to some choline analogues such as DEAE. This property has been exploited for the development of *E. coli* C-LYTA expressing plasmids useful for expression of fusion proteins. Purification of hybrid proteins containing the C-LYTA fragment at the amino terminus has been described (*see Biotechnology* 10:795-798, 1992). Within a preferred embodiment, a repeat portion of LYTA may be incorporated into a fusion protein. A repeat portion is found in the C-terminal region starting at residue 178. A particularly preferred repeat portion incorporates residues 188-305.

In general, polypeptides (including fusion proteins) and polynucleotides as described herein are isolated. An "isolated" polypeptide or polynucleotide is one that is removed from its original environment. For example, a naturally-occurring protein is isolated if it is separated from some or all of the coexisting materials in the natural system. Preferably, such polypeptides are at least about 90% pure, more preferably at least about 95% pure and most preferably at least about 99% pure. A polynucleotide is considered to be isolated if, for example, it is cloned into a vector that is not a part of the natural environment.

BINDING AGENTS

The present invention further provides agents, such as antibodies and antigen-binding fragments thereof, that specifically bind to a prostate tumor protein. As used herein, an antibody, or antigen-binding fragment thereof, is said to "specifically bind" to a prostate tumor protein if it reacts at a detectable level (within, for example, an ELISA) with a prostate tumor protein, and does not react detectably with unrelated proteins under similar conditions. As used herein, "binding" refers to a noncovalent association between two separate molecules such that a complex is formed. The ability to bind may be evaluated by, for example, determining a binding constant for the formation of the complex. The binding constant is the value obtained when the concentration of the complex is divided by the product of the component concentrations. In general, two compounds are said to "bind," in the context of the present invention, when the binding constant for complex formation exceeds about 10^3 L/mol. The binding constant may be determined using methods well known in the art.

Binding agents may be further capable of differentiating between patients with and without a cancer, such as prostate cancer, using the representative assays provided herein. In other words, antibodies or other binding agents that bind to a prostate tumor protein will generate a signal indicating the presence of a cancer in at least about 20% of patients with the disease, and will generate a negative signal indicating the absence of the disease in at least about 90% of individuals without the cancer. To determine whether a binding agent satisfies this requirement, biological samples (e.g., blood, sera, urine and/or tumor biopsies) from

patients with and without a cancer (as determined using standard clinical tests) may be assayed as described herein for the presence of polypeptides that bind to the binding agent. It will be apparent that a statistically significant number of samples with and without the disease should be assayed. Each binding agent should satisfy the above criteria; however, those of ordinary skill in the art will recognize that binding agents may be used in combination to improve sensitivity.

Any agent that satisfies the above requirements may be a binding agent. For example, a binding agent may be a ribosome, with or without a peptide component, an RNA molecule or a polypeptide. In a preferred embodiment, a binding agent is an antibody or an antigen-binding fragment thereof. Antibodies may be prepared by any of a variety of techniques known to those of ordinary skill in the art. *See, e.g., Harlow and Lane, Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, antibodies can be produced by cell culture techniques, including the generation of monoclonal antibodies as described herein, or via transfection of antibody genes into suitable bacterial or mammalian cell hosts, in order to allow for the production of recombinant antibodies. In one technique, an immunogen comprising the polypeptide is initially injected into any of a wide variety of mammals (*e.g., mice, rats, rabbits, sheep or goats*). In this step, the polypeptides of this invention may serve as the immunogen without modification. Alternatively, particularly for relatively short polypeptides, a superior immune response may be elicited if the polypeptide is joined to a carrier protein, such as bovine serum albumin or keyhole limpet hemocyanin. The immunogen is injected into the animal host, preferably according to a predetermined schedule incorporating one or more booster immunizations, and the animals are bled periodically. Polyclonal antibodies specific for the polypeptide may then be purified from such antisera by, for example, affinity chromatography using the polypeptide coupled to a suitable solid support.

Monoclonal antibodies specific for an antigenic polypeptide of interest may be prepared, for example, using the technique of Kohler and Milstein, *Eur. J. Immunol.* 6:511-519, 1976, and improvements thereto. Briefly, these methods involve the preparation of immortal cell lines capable of producing antibodies having the desired specificity (*i.e., reactivity with the polypeptide of interest*). Such cell lines may be produced, for example, from spleen cells obtained from an animal immunized as described above. The spleen cells are then immortalized by, for example, fusion with a myeloma cell fusion partner, preferably one that is syngeneic with the immunized animal. A variety of fusion techniques may be employed. For example, the spleen cells and myeloma cells may be combined with a nonionic detergent for a few minutes and then plated at low density on a selective medium that supports the growth of hybrid cells, but not myeloma cells. A preferred selection technique uses HAT (hypoxanthine, aminopterin, thymidine) selection. After a sufficient

time, usually about 1 to 2 weeks, colonies of hybrids are observed. Single colonies are selected and their culture supernatants tested for binding activity against the polypeptide. Hybridomas having high reactivity and specificity are preferred.

Monoclonal antibodies may be isolated from the supernatants of growing hybridoma colonies. In addition, various techniques may be employed to enhance the yield, such as injection of the hybridoma cell line into the peritoneal cavity of a suitable vertebrate host, such as a mouse. Monoclonal antibodies may then be harvested from the ascites fluid or the blood. Contaminants may be removed from the antibodies by conventional techniques, such as chromatography, gel filtration, precipitation, and extraction. The polypeptides of this invention may be used in the purification process in, for example, an affinity chromatography step.

Within certain embodiments, the use of antigen-binding fragments of antibodies may be preferred. Such fragments include Fab fragments, which may be prepared using standard techniques. Briefly, immunoglobulins may be purified from rabbit serum by affinity chromatography on Protein A bead columns (Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988) and digested by papain to yield Fab and Fc fragments. The Fab and Fc fragments may be separated by affinity chromatography on protein A bead columns.

Monoclonal antibodies of the present invention may be coupled to one or more therapeutic agents. Suitable agents in this regard include radionuclides, differentiation inducers, drugs, toxins, and derivatives thereof. Preferred radionuclides include ^{90}Y , ^{123}I , ^{125}I , ^{131}I , ^{186}Re , ^{188}Re , ^{211}At , and ^{212}Bi . Preferred drugs include methotrexate, and pyrimidine and purine analogs. Preferred differentiation inducers include phorbol esters and butyric acid. Preferred toxins include ricin, abrin, diphtheria toxin, cholera toxin, gelonin, *Pseudomonas* exotoxin, *Shigella* toxin, and pokeweed antiviral protein.

A therapeutic agent may be coupled (*e.g.*, covalently bonded) to a suitable monoclonal antibody either directly or indirectly (*e.g.*, via a linker group). A direct reaction between an agent and an antibody is possible when each possesses a substituent capable of reacting with the other. For example, a nucleophilic group, such as an amino or sulfhydryl group, on one may be capable of reacting with a carbonyl-containing group, such as an anhydride or an acid halide, or with an alkyl group containing a good leaving group (*e.g.*, a halide) on the other.

Alternatively, it may be desirable to couple a therapeutic agent and an antibody via a linker group. A linker group can function as a spacer to distance an antibody from an agent in order to avoid interference with binding capabilities. A linker group can also serve to increase the chemical reactivity of a substituent on an agent or an antibody, and

thus increase the coupling efficiency. An increase in chemical reactivity may also facilitate the use of agents, or functional groups on agents, which otherwise would not be possible.

It will be evident to those skilled in the art that a variety of bifunctional or polyfunctional reagents, both homo- and hetero-functional (such as those described in the catalog of the Pierce Chemical Co., Rockford, IL), may be employed as the linker group. Coupling may be effected, for example, through amino groups, carboxyl groups, sulfhydryl groups or oxidized carbohydrate residues. There are numerous references describing such methodology, *e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.

Where a therapeutic agent is more potent when free from the antibody portion of the immunoconjugates of the present invention, it may be desirable to use a linker group which is cleavable during or upon internalization into a cell. A number of different cleavable linker groups have been described. The mechanisms for the intracellular release of an agent from these linker groups include cleavage by reduction of a disulfide bond (*e.g.*, U.S. Patent No. 4,489,710, to Spitler), by irradiation of a photolabile bond (*e.g.*, U.S. Patent No. 4,625,014, to Senter et al.), by hydrolysis of derivatized amino acid side chains (*e.g.*, U.S. Patent No. 4,638,045, to Kohn et al.), by serum complement-mediated hydrolysis (*e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.), and acid-catalyzed hydrolysis (*e.g.*, U.S. Patent No. 4,569,789, to Blattler et al.).

It may be desirable to couple more than one agent to an antibody. In one embodiment, multiple molecules of an agent are coupled to one antibody molecule. In another embodiment, more than one type of agent may be coupled to one antibody. Regardless of the particular embodiment, immunoconjugates with more than one agent may be prepared in a variety of ways. For example, more than one agent may be coupled directly to an antibody molecule, or linkers which provide multiple sites for attachment can be used. Alternatively, a carrier can be used.

A carrier may bear the agents in a variety of ways, including covalent bonding either directly or via a linker group. Suitable carriers include proteins such as albumins (*e.g.*, U.S. Patent No. 4,507,234, to Kato et al.), peptides and polysaccharides such as aminodextran (*e.g.*, U.S. Patent No. 4,699,784, to Shih et al.). A carrier may also bear an agent by noncovalent bonding or by encapsulation, such as within a liposome vesicle (*e.g.*, U.S. Patent Nos. 4,429,008 and 4,873,088). Carriers specific for radionuclide agents include radiohalogenated small molecules and chelating compounds. For example, U.S. Patent No. 4,735,792 discloses representative radiohalogenated small molecules and their synthesis. A radionuclide chelate may be formed from chelating compounds that include those containing nitrogen and sulfur atoms as the donor atoms for binding the metal, or metal oxide, radionuclide. For example, U.S. Patent No. 4,673,562, to Davison et al. discloses representative chelating compounds and their synthesis.

A variety of routes of administration for the antibodies and immunoconjugates may be used. Typically, administration will be intravenous, intramuscular, subcutaneous or in the bed of a resected tumor. It will be evident that the precise dose of the antibody/immunoconjugate will vary depending upon the antibody used, the antigen density on the tumor, and the rate of clearance of the antibody.

T CELLS

Immunotherapeutic compositions may also, or alternatively, comprise T cells specific for a prostate tumor protein. Such cells may generally be prepared *in vitro* or *ex vivo*, using standard procedures. For example, T cells may be isolated from bone marrow, peripheral blood, or a fraction of bone marrow or peripheral blood of a patient, using a commercially available cell separation system, such as the CEPRATE™ system, available from CellPro Inc., Bothell WA (*see also* U.S. Patent No. 5,240,856; U.S. Patent No. 5,215,926; WO 89/06280; WO 91/16116 and WO 92/07243). Alternatively, T cells may be derived from related or unrelated humans, non-human mammals, cell lines or cultures.

T cells may be stimulated with a prostate tumor polypeptide, polynucleotide encoding a prostate tumor polypeptide and/or an antigen presenting cell (APC) that expresses such a polypeptide. Such stimulation is performed under conditions and for a time sufficient to permit the generation of T cells that are specific for the polypeptide. Preferably, a prostate tumor polypeptide or polynucleotide is present within a delivery vehicle, such as a microsphere, to facilitate the generation of specific T cells.

T cells are considered to be specific for a prostate tumor polypeptide if the T cells kill target cells coated with the polypeptide or expressing a gene encoding the polypeptide. T cell specificity may be evaluated using any of a variety of standard techniques. For example, within a chromium release assay or proliferation assay, a stimulation index of more than two fold increase in lysis and/or proliferation, compared to negative controls, indicates T cell specificity. Such assays may be performed, for example, as described in Chen et al., *Cancer Res.* 54:1065-1070, 1994. Alternatively, detection of the proliferation of T cells may be accomplished by a variety of known techniques. For example, T cell proliferation can be detected by measuring an increased rate of DNA synthesis (*e.g.*, by pulse-labeling cultures of T cells with tritiated thymidine and measuring the amount of tritiated thymidine incorporated into DNA). Contact with a prostate tumor polypeptide (100 ng/ml - 100 µg/ml, preferably 200 ng/ml - 25 µg/ml) for 3 - 7 days should result in at least a two fold increase in proliferation of the T cells. Contact as described above for 2-3 hours should result in activation of the T cells, as measured using standard cytokine assays in which a two fold increase in the level of cytokine release (*e.g.*, TNF or IFN-γ) is indicative of T cell activation (*see* Coligan et al., *Current Protocols in Immunology*, vol. 1, Wiley Interscience

(Greene 1998)). T cells that have been activated in response to a prostate tumor polypeptide, polynucleotide or polypeptide-expressing APC may be CD4⁺ and/or CD8⁺. Prostate tumor protein-specific T cells may be expanded using standard techniques. Within preferred embodiments, the T cells are derived from either a patient or a related, or unrelated, donor and are administered to the patient following stimulation and expansion.

For therapeutic purposes, CD4⁺ or CD8⁺ T cells that proliferate in response to a prostate tumor polypeptide, polynucleotide or APC can be expanded in number either *in vitro* or *in vivo*. Proliferation of such T cells *in vitro* may be accomplished in a variety of ways. For example, the T cells can be re-exposed to a prostate tumor polypeptide, or a short peptide corresponding to an immunogenic portion of such a polypeptide, with or without the addition of T cell growth factors, such as interleukin-2, and/or stimulator cells that synthesize a prostate tumor polypeptide. Alternatively, one or more T cells that proliferate in the presence of a prostate tumor protein can be expanded in number by cloning. Methods for cloning cells are well known in the art, and include limiting dilution.

PHARMACEUTICAL COMPOSITIONS AND VACCINES

Within certain aspects, polypeptides, polynucleotides, T cells and/or binding agents disclosed herein may be incorporated into pharmaceutical compositions or immunogenic compositions (*i.e.*, vaccines). Pharmaceutical compositions comprise one or more such compounds and a physiologically acceptable carrier. Vaccines may comprise one or more such compounds and a non-specific immune response enhancer. A non-specific immune response enhancer may be any substance that enhances an immune response to an exogenous antigen. Examples of non-specific immune response enhancers include adjuvants, biodegradable microspheres (*e.g.*, polylactic galactide) and liposomes (into which the compound is incorporated; *see e.g.*, Fullerton, U.S. Patent No. 4,235,877). Vaccine preparation is generally described in, for example, M.F. Powell and M.J. Newman, eds., "Vaccine Design (the subunit and adjuvant approach)," Plenum Press (NY, 1995). Pharmaceutical compositions and vaccines within the scope of the present invention may also contain other compounds, which may be biologically active or inactive. For example, one or more immunogenic portions of other tumor antigens may be present, either incorporated into a fusion polypeptide or as a separate compound, within the composition or vaccine.

A pharmaceutical composition or vaccine may contain DNA encoding one or more of the polypeptides as described above, such that the polypeptide is generated *in situ*. As noted above, the DNA may be present within any of a variety of delivery systems known to those of ordinary skill in the art, including nucleic acid expression systems, bacteria and viral expression systems. Numerous gene delivery techniques are well known in the art, such as those described by Rolland, *Crit. Rev. Therap. Drug Carrier Systems* 15:143-198, 1998,

and references cited therein. Appropriate nucleic acid expression systems contain the necessary DNA sequences for expression in the patient (such as a suitable promoter and terminating signal). Bacterial delivery systems involve the administration of a bacterium (such as *Bacillus-Calmette-Guerrin*) that expresses an immunogenic portion of the polypeptide on its cell surface or secretes such an epitope. In a preferred embodiment, the DNA may be introduced using a viral expression system (e.g., vaccinia or other pox virus, retrovirus, or adenovirus), which may involve the use of a non-pathogenic (defective), replication competent virus. Suitable systems are disclosed, for example, in Fisher-Hoch et al., *Proc. Natl. Acad. Sci. USA* 86:317-321, 1989; Flexner et al., *Ann. N.Y. Acad. Sci.* 569:86-103, 1989; Flexner et al., *Vaccine* 8:17-21, 1990; U.S. Patent Nos. 4,603,112, 4,769,330, and 5,017,487; WO 89/01973; U.S. Patent No. 4,777,127; GB 2,200,651; EP 0,345,242; WO 91/02805; Berkner, *Biotechniques* 6:616-627, 1988; Rosenfeld et al., *Science* 252:431-434, 1991; Kolls et al., *Proc. Natl. Acad. Sci. USA* 91:215-219, 1994; Kass-Eisler et al., *Proc. Natl. Acad. Sci. USA* 90:11498-11502, 1993; Guzman et al., *Circulation* 88:2838-2848, 1993; and Guzman et al., *Cir. Res.* 73:1202-1207, 1993. Techniques for incorporating DNA into such expression systems are well known to those of ordinary skill in the art. The DNA may also be "naked," as described, for example, in Ulmer et al., *Science* 259:1745-1749, 1993 and reviewed by Cohen, *Science* 259:1691-1692, 1993. The uptake of naked DNA may be increased by coating the DNA onto biodegradable beads, which are efficiently transported into the cells.

While any suitable carrier known to those of ordinary skill in the art may be employed in the pharmaceutical compositions of this invention, the type of carrier will vary depending on the mode of administration. Compositions of the present invention may be formulated for any appropriate manner of administration, including for example, topical, oral, nasal, intravenous, intracranial, intraperitoneal, subcutaneous or intramuscular administration. For parenteral administration, such as subcutaneous injection, the carrier preferably comprises water, saline, alcohol, a fat, a wax or a buffer. For oral administration, any of the above carriers or a solid carrier, such as mannitol, lactose, starch, magnesium stearate, sodium saccharine, talcum, cellulose, glucose, sucrose, and magnesium carbonate, may be employed. Biodegradable microspheres (e.g., polylactate polyglycolate) may also be employed as carriers for the pharmaceutical compositions of this invention. Suitable biodegradable microspheres are disclosed, for example, in U.S. Patent Nos. 4,897,268 and 5,075,109.

Such compositions may also comprise buffers (e.g., neutral buffered saline or phosphate buffered saline), carbohydrates (e.g., glucose, mannose, sucrose or dextrans), mannitol, proteins, polypeptides or amino acids such as glycine, antioxidants, chelating agents such as EDTA or glutathione, adjuvants (e.g., aluminum hydroxide) and/or

preservatives. Alternatively, compositions of the present invention may be formulated as a lyophilizate. Compounds may also be encapsulated within liposomes using well known technology.

Any of a variety of non-specific immune response enhancers may be employed in the vaccines of this invention. For example, an adjuvant may be included. Most adjuvants contain a substance designed to protect the antigen from rapid catabolism, such as aluminum hydroxide or mineral oil, and a stimulator of immune responses, such as lipid A, *Bordetella pertussis* or *Mycobacterium tuberculosis* derived proteins. Suitable adjuvants are commercially available as, for example, Freund's Incomplete Adjuvant and Complete Adjuvant (Difco Laboratories, Detroit, MI); Merck Adjuvant 65 (Merck and Company, Inc., Rahway, NJ); aluminum salts such as aluminum hydroxide gel (alum) or aluminum phosphate; salts of calcium, iron or zinc; an insoluble suspension of acylated tyrosine; acylated sugars; cationically or anionically derivatized polysaccharides; polyphosphazenes; biodegradable microspheres; monophosphoryl lipid A and quil A. Cytokines, such as GM-CSF or interleukin-2, -7, or -12, may also be used as adjuvants.

Within the vaccines provided herein, the adjuvant composition is preferably designed to induce an immune response predominantly of the Th1 type. High levels of Th1-type cytokines (*e.g.*, IFN- γ , IL-2 and IL-12) tend to favor the induction of cell mediated immune responses to an administered antigen. In contrast, high levels of Th2-type cytokines (*e.g.*, IL-4, IL-5, IL-6, IL-10 and TNF- β) tend to favor the induction of humoral immune responses. Following application of a vaccine as provided herein, a patient will support an immune response that includes Th1- and Th2-type responses. Within a preferred embodiment, in which a response is predominantly Th1-type, the level of Th1-type cytokines will increase to a greater extent than the level of Th2-type cytokines. The levels of these cytokines may be readily assessed using standard assays. For a review of the families of cytokines, see Mosmann and Coffman, *Ann. Rev. Immunol.* 7:145-173, 1989.

Preferred adjuvants for use in eliciting a predominantly Th1-type response include, for example, a combination of monophosphoryl lipid A, preferably 3-de-O-acylated monophosphoryl lipid A (3D-MPL), together with an aluminum salt. MPL adjuvants are available from Ribi ImmunoChem Research Inc. (Hamilton, MT; *see* US Patent Nos. 4,436,727; 4,877,611; 4,866,034 and 4,912,094). CpG-containing oligonucleotides (in which the CpG dinucleotide is unmethylated) also induce a predominantly Th1 response. Such oligonucleotides are well known and are described, for example, in WO 96/02555. Another preferred adjuvant is a saponin, preferably QS21, which may be used alone or in combination with other adjuvants. For example, an enhanced system involves the combination of a monophosphoryl lipid A and saponin derivative, such as the combination of QS21 and 3D-MPL as described in WO 94/00153, or a less reactogenic composition where the QS21 is

quenched with cholesterol, as described in WO 96/33739. Other preferred formulations comprises an oil-in-water emulsion and tocopherol. A particularly potent adjuvant formulation involving QS21, 3D-MPL and tocopherol in an oil-in-water emulsion is described in WO 95/17210. Any vaccine provided herein may be prepared using well known methods that result in a combination of antigen, immune response enhancer and a suitable carrier or excipient.

The compositions described herein may be administered as part of a sustained release formulation (*i.e.*, a formulation such as a capsule or sponge that effects a slow release of compound following administration). Such formulations may generally be prepared using well known technology and administered by, for example, oral, rectal or subcutaneous implantation, or by implantation at the desired target site. Sustained-release formulations may contain a polypeptide, polynucleotide or antibody dispersed in a carrier matrix and/or contained within a reservoir surrounded by a rate controlling membrane. Carriers for use within such formulations are biocompatible, and may also be biodegradable; preferably the formulation provides a relatively constant level of active component release. The amount of active compound contained within a sustained release formulation depends upon the site of implantation, the rate and expected duration of release and the nature of the condition to be treated or prevented.

Any of a variety of delivery vehicles may be employed within pharmaceutical compositions and vaccines to facilitate production of an antigen-specific immune response that targets tumor cells. Delivery vehicles include antigen presenting cells (APCs), such as dendritic cells, macrophages, B cells, monocytes and other cells that may be engineered to be efficient APCs. Such cells may, but need not, be genetically modified to increase the capacity for presenting the antigen, to improve activation and/or maintenance of the T cell response, to have anti-tumor effects *per se* and/or to be immunologically compatible with the receiver (*i.e.*, matched HLA haplotype). APCs may generally be isolated from any of a variety of biological fluids and organs, including tumor and peritumoral tissues, and may be autologous, allogeneic, syngeneic or xenogeneic cells.

Certain preferred embodiments of the present invention use dendritic cells or progenitors thereof as antigen-presenting cells. Dendritic cells are highly potent APCs (Banchereau and Steinman, *Nature* 392:245-251, 1998) and have been shown to be effective as a physiological adjuvant for eliciting prophylactic or therapeutic antitumor immunity (*see* Timmerman and Levy, *Ann. Rev. Med.* 50:507-529, 1999). In general, dendritic cells may be identified based on their typical shape (stellate *in situ*, with marked cytoplasmic processes (dendrites) visible *in vitro*) and based on the lack of differentiation markers of B cells (CD19 and CD20), T cells (CD3), monocytes (CD14) and natural killer cells (CD56), as determined using standard assays. Dendritic cells may, of course, be engineered to express specific cell-

surface receptors or ligands that are not commonly found on dendritic cells *in vivo* or *ex vivo*, and such modified dendritic cells are contemplated by the present invention. As an alternative to dendritic cells, secreted vesicles antigen-loaded dendritic cells (called exosomes) may be used within a vaccine (*see* Zitvogel et al., *Nature Med.* 4:594-600, 1998).

Dendritic cells and progenitors may be obtained from peripheral blood, bone marrow, tumor-infiltrating cells, peritumoral tissues-infiltrating cells, lymph nodes, spleen, skin, umbilical cord blood or any other suitable tissue or fluid. For example, dendritic cells may be differentiated *ex vivo* by adding a combination of cytokines such as GM-CSF, IL-4, IL-13 and/or TNF α to cultures of monocytes harvested from peripheral blood. Alternatively, CD34 positive cells harvested from peripheral blood, umbilical cord blood or bone marrow may be differentiated into dendritic cells by adding to the culture medium combinations of GM-CSF, IL-3, TNF α , CD40 ligand, LPS, flt3 ligand and/or other compound(s) that induce maturation and proliferation of dendritic cells.

Dendritic cells are conveniently categorized as "immature" and "mature" cells, which allows a simple way to discriminate between two well characterized phenotypes. However, this nomenclature should not be construed to exclude all possible intermediate stages of differentiation. Immature dendritic cells are characterized as APC with a high capacity for antigen uptake and processing, which correlates with the high expression of Fc γ receptor, mannose receptor and DEC-205 marker. The mature phenotype is typically characterized by a lower expression of these markers, but a high expression of cell surface molecules responsible for T cell activation such as class I and class II MHC, adhesion molecules (*e.g.*, CD54 and CD11) and costimulatory molecules (*e.g.*, CD40, CD80 and CD86).

APCs may generally be transfected with a polynucleotide encoding a prostate tumor protein (or portion or other variant thereof) such that the prostate tumor polypeptide, or an immunogenic portion thereof, is expressed on the cell surface. Such transfection may take place *ex vivo*, and a composition or vaccine comprising such transfected cells may then be used for therapeutic purposes, as described herein. Alternatively, a gene delivery vehicle that targets a dendritic or other antigen presenting cell may be administered to a patient, resulting in transfection that occurs *in vivo*. *In vivo* and *ex vivo* transfection of dendritic cells, for example, may generally be performed using any methods known in the art, such as those described in WO 97/24447, or the gene gun approach described by Mahvi et al., *Immunology and cell Biology* 75:456-460, 1997. Antigen loading of dendritic cells may be achieved by incubating dendritic cells or progenitor cells with the prostate tumor polypeptide, DNA (naked or within a plasmid vector) or RNA; or with antigen-expressing recombinant bacterium or viruses (*e.g.*, vaccinia, fowlpox, adenovirus or lentivirus vectors). Prior to loading, the polypeptide may be covalently conjugated to an immunological partner that

provides T cell help (*e.g.*, a carrier molecule). Alternatively, a dendritic cell may be pulsed with a non-conjugated immunological partner, separately or in the presence of the polypeptide.

CANCER THERAPY

In further aspects of the present invention, the compositions described herein may be used for immunotherapy of cancer, such as prostate cancer. Within such methods, pharmaceutical compositions and vaccines are typically administered to a patient. As used herein, a "patient" refers to any warm-blooded animal, preferably a human. A patient may or may not be afflicted with cancer. Accordingly, the above pharmaceutical compositions and vaccines may be used to prevent the development of a cancer or to treat a patient afflicted with a cancer. A cancer may be diagnosed using criteria generally accepted in the art, including the presence of a malignant tumor. Pharmaceutical compositions and vaccines may be administered either prior to or following surgical removal of primary tumors and/or treatment such as administration of radiotherapy or conventional chemotherapeutic drugs.

Within certain embodiments, immunotherapy may be active immunotherapy, in which treatment relies on the *in vivo* stimulation of the endogenous host immune system to react against tumors with the administration of immune response-modifying agents (such as polypeptides and polynucleotides disclosed herein).

Within other embodiments, immunotherapy may be passive immunotherapy, in which treatment involves the delivery of agents with established tumor-immune reactivity (such as effector cells or antibodies) that can directly or indirectly mediate antitumor effects and does not necessarily depend on an intact host immune system. Examples of effector cells include T cells as discussed above, T lymphocytes (such as CD8⁺ cytotoxic T lymphocytes and CD4⁺ T-helper tumor-infiltrating lymphocytes), killer cells (such as Natural Killer cells and lymphokine-activated killer cells), B cells and antigen-presenting cells (such as dendritic cells and macrophages) expressing a polypeptide provided herein. T cell receptors and antibody receptors specific for the polypeptides recited herein may be cloned, expressed and transferred into other vectors or effector cells for adoptive immunotherapy. The polypeptides provided herein may also be used to generate antibodies or anti-idiotypic antibodies (as described above and in U.S. Patent No. 4,918,164) for passive immunotherapy.

Effector cells may generally be obtained in sufficient quantities for adoptive immunotherapy by growth *in vitro*, as described herein. Culture conditions for expanding single antigen-specific effector cells to several billion in number with retention of antigen recognition *in vivo* are well known in the art. Such *in vitro* culture conditions typically use intermittent stimulation with antigen, often in the presence of cytokines (such as IL-2) and non-dividing feeder cells. As noted above, immunoreactive polypeptides as provided herein

may be used to rapidly expand antigen-specific T cell cultures in order to generate a sufficient number of cells for immunotherapy. In particular, antigen-presenting cells, such as dendritic, macrophage, monocyte, fibroblast or B cells, may be pulsed with immunoreactive polypeptides or transfected with one or more polynucleotides using standard techniques well known in the art. For example, antigen-presenting cells can be transfected with a polynucleotide having a promoter appropriate for increasing expression in a recombinant virus or other expression system. Cultured effector cells for use in therapy must be able to grow and distribute widely, and to survive long term *in vivo*. Studies have shown that cultured effector cells can be induced to grow *in vivo* and to survive long term in substantial numbers by repeated stimulation with antigen supplemented with IL-2 (*see, for example, Cheever et al., Immunological Reviews 157:177, 1997*).

Alternatively, a vector expressing a polypeptide recited herein may be introduced into antigen presenting cells taken from a patient and clonally propagated *ex vivo* for transplant back into the same patient. Transfected cells may be reintroduced into the patient using any means known in the art, preferably in sterile form by intravenous, intracavitary, intraperitoneal or intratumor administration.

Routes and frequency of administration of the therapeutic compositions disclosed herein, as well as dosage, will vary from individual to individual, and may be readily established using standard techniques. In general, the pharmaceutical compositions and vaccines may be administered by injection (*e.g.*, intracutaneous, intramuscular, intravenous or subcutaneous), intranasally (*e.g.*, by aspiration) or orally. Preferably, between 1 and 10 doses may be administered over a 52 week period. Preferably, 6 doses are administered, at intervals of 1 month, and booster vaccinations may be given periodically thereafter. Alternate protocols may be appropriate for individual patients. A suitable dose is an amount of a compound that, when administered as described above, is capable of promoting an anti-tumor immune response, and is at least 10-50% above the basal (*i.e.*, untreated) level. Such response can be monitored by measuring the anti-tumor antibodies in a patient or by vaccine-dependent generation of cytolytic effector cells capable of killing the patient's tumor cells *in vitro*. Such vaccines should also be capable of causing an immune response that leads to an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial or longer disease-free survival) in vaccinated patients as compared to non-vaccinated patients. In general, for pharmaceutical compositions and vaccines comprising one or more polypeptides, the amount of each polypeptide present in a dose ranges from about 100 µg to 5 mg per kg of host. Suitable dose sizes will vary with the size of the patient, but will typically range from about 0.1 mL to about 5 mL.

In general, an appropriate dosage and treatment regimen provides the active compound(s) in an amount sufficient to provide therapeutic and/or prophylactic benefit. Such

a response can be monitored by establishing an improved clinical outcome (e.g., more frequent remissions, complete or partial, or longer disease-free survival) in treated patients as compared to non-treated patients. Increases in preexisting immune responses to a prostate tumor protein generally correlate with an improved clinical outcome. Such immune responses may generally be evaluated using standard proliferation, cytotoxicity or cytokine assays, which may be performed using samples obtained from a patient before and after treatment.

METHODS FOR DETECTING CANCER

In general, a cancer may be detected in a patient based on the presence of one or more prostate tumor proteins and/or polynucleotides encoding such proteins in a biological sample (for example, blood, sera, urine and/or tumor biopsies) obtained from the patient. In other words, such proteins may be used as markers to indicate the presence or absence of a cancer such as prostate cancer. In addition, such proteins may be useful for the detection of other cancers. The binding agents provided herein generally permit detection of the level of antigen that binds to the agent in the biological sample. Polynucleotide primers and probes may be used to detect the level of mRNA encoding a tumor protein, which is also indicative of the presence or absence of a cancer. In general, a prostate tumor sequence should be present at a level that is at least three fold higher in tumor tissue than in normal tissue

There are a variety of assay formats known to those of ordinary skill in the art for using a binding agent to detect polypeptide markers in a sample. *See, e.g., Harlow and Lane, Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, the presence or absence of a cancer in a patient may be determined by (a) contacting a biological sample obtained from a patient with a binding agent; (b) detecting in the sample a level of polypeptide that binds to the binding agent; and (c) comparing the level of polypeptide with a predetermined cut-off value.

In a preferred embodiment, the assay involves the use of binding agent immobilized on a solid support to bind to and remove the polypeptide from the remainder of the sample. The bound polypeptide may then be detected using a detection reagent that contains a reporter group and specifically binds to the binding agent/polypeptide complex. Such detection reagents may comprise, for example, a binding agent that specifically binds to the polypeptide or an antibody or other agent that specifically binds to the binding agent, such as an anti-immunoglobulin, protein G, protein A or a lectin. Alternatively, a competitive assay may be utilized, in which a polypeptide is labeled with a reporter group and allowed to bind to the immobilized binding agent after incubation of the binding agent with the sample. The extent to which components of the sample inhibit the binding of the labeled polypeptide to the binding agent is indicative of the reactivity of the sample with the immobilized binding

agent. Suitable polypeptides for use within such assays include full length prostate tumor proteins and portions thereof to which the binding agent binds, as described above.

The solid support may be any material known to those of ordinary skill in the art to which the tumor protein may be attached. For example, the solid support may be a test well in a microtiter plate or a nitrocellulose or other suitable membrane. Alternatively, the support may be a bead or disc, such as glass, fiberglass, latex or a plastic material such as polystyrene or polyvinylchloride. The support may also be a magnetic particle or a fiber optic sensor, such as those disclosed, for example, in U.S. Patent No. 5,359,681. The binding agent may be immobilized on the solid support using a variety of techniques known to those of skill in the art, which are amply described in the patent and scientific literature. In the context of the present invention, the term "immobilization" refers to both noncovalent association, such as adsorption, and covalent attachment (which may be a direct linkage between the agent and functional groups on the support or may be a linkage by way of a cross-linking agent). Immobilization by adsorption to a well in a microtiter plate or to a membrane is preferred. In such cases, adsorption may be achieved by contacting the binding agent, in a suitable buffer, with the solid support for a suitable amount of time. The contact time varies with temperature, but is typically between about 1 hour and about 1 day. In general, contacting a well of a plastic microtiter plate (such as polystyrene or polyvinylchloride) with an amount of binding agent ranging from about 10 ng to about 10 μ g, and preferably about 100 ng to about 1 μ g, is sufficient to immobilize an adequate amount of binding agent.

Covalent attachment of binding agent to a solid support may generally be achieved by first reacting the support with a bifunctional reagent that will react with both the support and a functional group, such as a hydroxyl or amino group, on the binding agent. For example, the binding agent may be covalently attached to supports having an appropriate polymer coating using benzoquinone or by condensation of an aldehyde group on the support with an amine and an active hydrogen on the binding partner (*see, e.g.*, Pierce Immunotechnology Catalog and Handbook, 1991, at A12-A13).

In certain embodiments, the assay is a two-antibody sandwich assay. This assay may be performed by first contacting an antibody that has been immobilized on a solid support, commonly the well of a microtiter plate, with the sample, such that polypeptides within the sample are allowed to bind to the immobilized antibody. Unbound sample is then removed from the immobilized polypeptide-antibody complexes and a detection reagent (preferably a second antibody capable of binding to a different site on the polypeptide) containing a reporter group is added. The amount of detection reagent that remains bound to the solid support is then determined using a method appropriate for the specific reporter group.

More specifically, once the antibody is immobilized on the support as described above, the remaining protein binding sites on the support are typically blocked. Any suitable blocking agent known to those of ordinary skill in the art, such as bovine serum albumin or Tween 20™ (Sigma Chemical Co., St. Louis, MO). The immobilized antibody is then incubated with the sample, and polypeptide is allowed to bind to the antibody. The sample may be diluted with a suitable diluent, such as phosphate-buffered saline (PBS) prior to incubation. In general, an appropriate contact time (*i.e.*, incubation time) is a period of time that is sufficient to detect the presence of polypeptide within a sample obtained from an individual with prostate cancer. Preferably, the contact time is sufficient to achieve a level of binding that is at least about 95% of that achieved at equilibrium between bound and unbound polypeptide. Those of ordinary skill in the art will recognize that the time necessary to achieve equilibrium may be readily determined by assaying the level of binding that occurs over a period of time. At room temperature, an incubation time of about 30 minutes is generally sufficient.

Unbound sample may then be removed by washing the solid support with an appropriate buffer, such as PBS containing 0.1% Tween 20™. The second antibody, which contains a reporter group, may then be added to the solid support. Preferred reporter groups include those groups recited above.

The detection reagent is then incubated with the immobilized antibody-polypeptide complex for an amount of time sufficient to detect the bound polypeptide. An appropriate amount of time may generally be determined by assaying the level of binding that occurs over a period of time. Unbound detection reagent is then removed and bound detection reagent is detected using the reporter group. The method employed for detecting the reporter group depends upon the nature of the reporter group. For radioactive groups, scintillation counting or autoradiographic methods are generally appropriate. Spectroscopic methods may be used to detect dyes, luminescent groups and fluorescent groups. Biotin may be detected using avidin, coupled to a different reporter group (commonly a radioactive or fluorescent group or an enzyme). Enzyme reporter groups may generally be detected by the addition of substrate (generally for a specific period of time), followed by spectroscopic or other analysis of the reaction products.

To determine the presence or absence of a cancer, such as prostate cancer, the signal detected from the reporter group that remains bound to the solid support is generally compared to a signal that corresponds to a predetermined cut-off value. In one preferred embodiment, the cut-off value for the detection of a cancer is the average mean signal obtained when the immobilized antibody is incubated with samples from patients without the cancer. In general, a sample generating a signal that is three standard deviations above the predetermined cut-off value is considered positive for the cancer. In an alternate preferred

embodiment, the cut-off value is determined using a Receiver Operator Curve, according to the method of Sackett et al., *Clinical Epidemiology: A Basic Science for Clinical Medicine*, Little Brown and Co., 1985, p. 106-7. Briefly, in this embodiment, the cut-off value may be determined from a plot of pairs of true positive rates (*i.e.*, sensitivity) and false positive rates (100%-specificity) that correspond to each possible cut-off value for the diagnostic test result. The cut-off value on the plot that is the closest to the upper left-hand corner (*i.e.*, the value that encloses the largest area) is the most accurate cut-off value, and a sample generating a signal that is higher than the cut-off value determined by this method may be considered positive. Alternatively, the cut-off value may be shifted to the left along the plot, to minimize the false positive rate, or to the right, to minimize the false negative rate. In general, a sample generating a signal that is higher than the cut-off value determined by this method is considered positive for a cancer.

In a related embodiment, the assay is performed in a flow-through or strip test format, wherein the binding agent is immobilized on a membrane, such as nitrocellulose. In the flow-through test, polypeptides within the sample bind to the immobilized binding agent as the sample passes through the membrane. A second, labeled binding agent then binds to the binding agent-polypeptide complex as a solution containing the second binding agent flows through the membrane. The detection of bound second binding agent may then be performed as described above. In the strip test format, one end of the membrane to which binding agent is bound is immersed in a solution containing the sample. The sample migrates along the membrane through a region containing second binding agent and to the area of immobilized binding agent. Concentration of second binding agent at the area of immobilized antibody indicates the presence of a cancer. Typically, the concentration of second binding agent at that site generates a pattern, such as a line, that can be read visually. The absence of such a pattern indicates a negative result. In general, the amount of binding agent immobilized on the membrane is selected to generate a visually discernible pattern when the biological sample contains a level of polypeptide that would be sufficient to generate a positive signal in the two-antibody sandwich assay, in the format discussed above. Preferred binding agents for use in such assays are antibodies and antigen-binding fragments thereof. Preferably, the amount of antibody immobilized on the membrane ranges from about 25 ng to about 1 μ g, and more preferably from about 50 ng to about 500 ng. Such tests can typically be performed with a very small amount of biological sample.

Of course, numerous other assay protocols exist that are suitable for use with the tumor proteins or binding agents of the present invention. The above descriptions are intended to be exemplary only. For example, it will be apparent to those of ordinary skill in the art that the above protocols may be readily modified to use prostate tumor polypeptides to

detect antibodies that bind to such polypeptides in a biological sample. The detection of such prostate tumor protein specific antibodies may correlate with the presence of a cancer.

A cancer may also, or alternatively, be detected based on the presence of T cells that specifically react with a prostate tumor protein in a biological sample. Within certain methods, a biological sample comprising CD4⁺ and/or CD8⁺ T cells isolated from a patient is incubated with a prostate tumor polypeptide, a polynucleotide encoding such a polypeptide and/or an APC that expresses at least an immunogenic portion of such a polypeptide, and the presence or absence of specific activation of the T cells is detected. Suitable biological samples include, but are not limited to, isolated T cells. For example, T cells may be isolated from a patient by routine techniques (such as by Ficoll/Hypaque density gradient centrifugation of peripheral blood lymphocytes). T cells may be incubated *in vitro* for 2-9 days (typically 4 days) at 37°C with prostate tumor polypeptide (*e.g.*, 5 - 25 µg/ml). It may be desirable to incubate another aliquot of a T cell sample in the absence of prostate tumor polypeptide to serve as a control. For CD4⁺ T cells, activation is preferably detected by evaluating proliferation of the T cells. For CD8⁺ T cells, activation is preferably detected by evaluating cytolytic activity. A level of proliferation that is at least two fold greater and/or a level of cytolytic activity that is at least 20% greater than in disease-free patients indicates the presence of a cancer in the patient.

As noted above, a cancer may also, or alternatively, be detected based on the level of mRNA encoding a prostate tumor protein in a biological sample. For example, at least two oligonucleotide primers may be employed in a polymerase chain reaction (PCR) based assay to amplify a portion of a prostate tumor cDNA derived from a biological sample, wherein at least one of the oligonucleotide primers is specific for (*i.e.*, hybridizes to) a polynucleotide encoding the prostate tumor protein. The amplified cDNA is then separated and detected using techniques well known in the art, such as gel electrophoresis. Similarly, oligonucleotide probes that specifically hybridize to a polynucleotide encoding a prostate tumor protein may be used in a hybridization assay to detect the presence of polynucleotide encoding the tumor protein in a biological sample.

To permit hybridization under assay conditions, oligonucleotide primers and probes should comprise an oligonucleotide sequence that has at least about 60%, preferably at least about 75% and more preferably at least about 90%, identity to a portion of a polynucleotide encoding a prostate tumor protein that is at least 10 nucleotides, and preferably at least 20 nucleotides, in length. Preferably, oligonucleotide primers and/or probes will hybridize to a polynucleotide encoding a polypeptide disclosed herein under moderately stringent conditions, as defined above. Oligonucleotide primers and/or probes which may be usefully employed in the diagnostic methods described herein preferably are at least 10-40 nucleotides in length. In a preferred embodiment, the oligonucleotide primers

comprise at least 10 contiguous nucleotides, more preferably at least 15 contiguous nucleotides, of a DNA molecule having a sequence recited in SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375 and 381. Techniques for both PCR based assays and hybridization assays are well known in the art (*see*, for example, Mullis et al., *Cold Spring Harbor Symp. Quant. Biol.*, 51:263, 1987; Erlich ed., *PCR Technology*, Stockton Press, NY, 1989).

One preferred assay employs RT-PCR, in which PCR is applied in conjunction with reverse transcription. Typically, RNA is extracted from a biological sample, such as biopsy tissue, and is reverse transcribed to produce cDNA molecules. PCR amplification using at least one specific primer generates a cDNA molecule, which may be separated and visualized using, for example, gel electrophoresis. Amplification may be performed on biological samples taken from a test patient and from an individual who is not afflicted with a cancer. The amplification reaction may be performed on several dilutions of cDNA spanning two orders of magnitude. A two-fold or greater increase in expression in several dilutions of the test patient sample as compared to the same dilutions of the non-cancerous sample is typically considered positive.

In another embodiment, the disclosed compositions may be used as markers for the progression of cancer. In this embodiment, assays as described above for the diagnosis of a cancer may be performed over time, and the change in the level of reactive polypeptide(s) or polynucleotide evaluated. For example, the assays may be performed every 24-72 hours for a period of 6 months to 1 year, and thereafter performed as needed. In general, a cancer is progressing in those patients in whom the level of polypeptide or polynucleotide detected increases over time. In contrast, the cancer is not progressing when the level of reactive polypeptide or polynucleotide either remains constant or decreases with time.

Certain *in vivo* diagnostic assays may be performed directly on a tumor. One such assay involves contacting tumor cells with a binding agent. The bound binding agent may then be detected directly or indirectly via a reporter group. Such binding agents may also be used in histological applications. Alternatively, polynucleotide probes may be used within such applications.

As noted above, to improve sensitivity, multiple prostate tumor protein markers may be assayed within a given sample. It will be apparent that binding agents specific for different proteins provided herein may be combined within a single assay. Further, multiple primers or probes may be used concurrently. The selection of tumor protein markers may be based on routine experiments to determine combinations that results in optimal sensitivity. In addition, or alternatively, assays for tumor proteins provided herein may be combined with assays for other known tumor antigens.

DIAGNOSTIC KITS

The present invention further provides kits for use within any of the above diagnostic methods. Such kits typically comprise two or more components necessary for performing a diagnostic assay. Components may be compounds, reagents, containers and/or equipment. For example, one container within a kit may contain a monoclonal antibody or fragment thereof that specifically binds to a prostate tumor protein. Such antibodies or fragments may be provided attached to a support material, as described above. One or more additional containers may enclose elements, such as reagents or buffers, to be used in the assay. Such kits may also, or alternatively, contain a detection reagent as described above that contains a reporter group suitable for direct or indirect detection of antibody binding.

Alternatively, a kit may be designed to detect the level of mRNA encoding a prostate tumor protein in a biological sample. Such kits generally comprise at least one oligonucleotide probe or primer, as described above, that hybridizes to a polynucleotide encoding a prostate tumor protein. Such an oligonucleotide may be used, for example, within a PCR or hybridization assay. Additional components that may be present within such kits include a second oligonucleotide and/or a diagnostic reagent or container to facilitate the detection of a polynucleotide encoding a prostate tumor protein.

The following Examples are offered by way of illustration and not by way of limitation.

EXAMPLES

EXAMPLE 1

ISOLATION AND CHARACTERIZATION OF PROSTATE TUMOR POLYPEPTIDES

This Example describes the isolation of certain prostate tumor polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library was constructed from prostate tumor poly A⁺ RNA using a Superscript Plasmid System for cDNA Synthesis and Plasmid Cloning kit (BRL Life Technologies, Gaithersburg, MD 20897) following the manufacturer's protocol. Specifically, prostate tumor tissues were homogenized with polytron (Kinematica, Switzerland) and total RNA was extracted using Trizol reagent (BRL Life Technologies) as directed by the manufacturer. The poly A⁺ RNA was then purified using a Qiagen oligotex spin column mRNA purification kit (Qiagen, Santa Clarita, CA 91355) according to the manufacturer's protocol. First-strand cDNA was synthesized using the NotI/Oligo-dT18 primer. Double-stranded cDNA was synthesized, ligated with EcoRI/BAXI adaptors (Invitrogen, San Diego, CA) and digested with NotI. Following size fractionation with Chroma Spin-1000 columns (Clontech, Palo Alto, CA), the cDNA was ligated into the EcoRI/NotI site of pCDNA3.1 (Invitrogen) and transformed into ElectroMax *E. coli* DH10B cells (BRL Life Technologies) by electroporation.

Using the same procedure, a normal human pancreas cDNA expression library was prepared from a pool of six tissue specimens (Clontech). The cDNA libraries were characterized by determining the number of independent colonies, the percentage of clones that carried insert, the average insert size and by sequence analysis. The prostate tumor library contained 1.64×10^7 independent colonies, with 70% of clones having an insert and the average insert size being 1745 base pairs. The normal pancreas cDNA library contained 3.3×10^6 independent colonies, with 69% of clones having inserts and the average insert size being 1120 base pairs. For both libraries, sequence analysis showed that the majority of clones had a full length cDNA sequence and were synthesized from mRNA, with minimal rRNA and mitochondrial DNA contamination.

cDNA library subtraction was performed using the above prostate tumor and normal pancreas cDNA libraries, as described by Hara *et al.* (*Blood*, 84:189-199, 1994) with some modifications. Specifically, a prostate tumor-specific subtracted cDNA library was generated as follows. Normal pancreas cDNA library (70 µg) was digested with EcoRI, NotI, and SfuI, followed by a filling-in reaction with DNA polymerase Klenow fragment. After phenol-chloroform extraction and ethanol precipitation, the DNA was dissolved in 100 µl of

H₂O, heat-denatured and mixed with 100 μ l (100 μ g) of Photoprobe biotin (Vector Laboratories, Burlingame, CA). As recommended by the manufacturer, the resulting mixture was irradiated with a 270 W sunlamp on ice for 20 minutes. Additional Photoprobe biotin (50 μ l) was added and the biotinylation reaction was repeated. After extraction with butanol five times, the DNA was ethanol-precipitated and dissolved in 23 μ l H₂O to form the driver DNA.

To form the tracer DNA, 10 μ g prostate tumor cDNA library was digested with BamHI and XhoI, phenol chloroform extracted and passed through Chroma spin-400 columns (Clontech). Following ethanol precipitation, the tracer DNA was dissolved in 5 μ l H₂O. Tracer DNA was mixed with 15 μ l driver DNA and 20 μ l of 2 x hybridization buffer (1.5 M NaCl/10 mM EDTA/50 mM HEPES pH 7.5/0.2% sodium dodecyl sulfate), overlaid with mineral oil, and heat-denatured completely. The sample was immediately transferred into a 68 °C water bath and incubated for 20 hours (long hybridization [LH]). The reaction mixture was then subjected to a streptavidin treatment followed by phenol/chloroform extraction. This process was repeated three more times. Subtracted DNA was precipitated, dissolved in 12 μ l H₂O, mixed with 8 μ l driver DNA and 20 μ l of 2 x hybridization buffer, and subjected to a hybridization at 68 °C for 2 hours (short hybridization [SH]). After removal of biotinylated double-stranded DNA, subtracted cDNA was ligated into BamHI/XhoI site of chloramphenicol resistant pBCSK⁺ (Stratagene, La Jolla, CA 92037) and transformed into ElectroMax *E. coli* DH10B cells by electroporation to generate a prostate tumor specific subtracted cDNA library (referred to as "prostate subtraction 1").

To analyze the subtracted cDNA library, plasmid DNA was prepared from 100 independent clones, randomly picked from the subtracted prostate tumor specific library and grouped based on insert size. Representative cDNA clones were further characterized by DNA sequencing with a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A (Foster City, CA). Six cDNA clones, hereinafter referred to as F1-13, F1-12, F1-16, H1-1, H1-9 and H1-4, were shown to be abundant in the subtracted prostate-specific cDNA library. The determined 3' and 5' cDNA sequences for F1-12 are provided in SEQ ID NO: 2 and 3, respectively, with determined 3' cDNA sequences for F1-13, F1-16, H1-1, H1-9 and H1-4 being provided in SEQ ID NO: 1 and 4-7, respectively.

The cDNA sequences for the isolated clones were compared to known sequences in the gene bank using the EMBL and GenBank databases (release 96). Four of the prostate tumor cDNA clones, F1-13, F1-16, H1-1, and H1-4, were determined to encode the following previously identified proteins: prostate specific antigen (PSA), human glandular kallikrein, human tumor expression enhanced gene, and mitochondria cytochrome C oxidase subunit II. H1-9 was found to be identical to a previously identified human

autonomously replicating sequence. No significant homologies to the cDNA sequence for F1-12 were found.

Subsequent studies led to the isolation of a full-length cDNA sequence for F1-12. This sequence is provided in SEQ ID NO: 107, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 108.

To clone less abundant prostate tumor specific genes, cDNA library subtraction was performed by subtracting the prostate tumor cDNA library described above with the normal pancreas cDNA library and with the three most abundant genes in the previously subtracted prostate tumor specific cDNA library: human glandular kallikrein, prostate specific antigen (PSA), and mitochondria cytochrome C oxidase subunit II. Specifically, 1 µg each of human glandular kallikrein, PSA and mitochondria cytochrome C oxidase subunit II cDNAs in pCDNA3.1 were added to the driver DNA and subtraction was performed as described above to provide a second subtracted cDNA library hereinafter referred to as the "subtracted prostate tumor specific cDNA library with spike".

Twenty-two cDNA clones were isolated from the subtracted prostate tumor specific cDNA library with spike. The determined 3' and 5' cDNA sequences for the clones referred to as J1-17, L1-12, N1-1862, J1-13, J1-19, J1-25, J1-24, K1-58, K1-63, L1-4 and L1-14 are provided in SEQ ID NOS: 8-9, 10-11, 12-13, 14-15, 16-17, 18-19, 20-21, 22-23, 24-25, 26-27 and 28-29, respectively. The determined 3' cDNA sequences for the clones referred to as J1-12, J1-16, J1-21, K1-48, K1-55, L1-2, L1-6, N1-1858, N1-1860, N1-1861, N1-1864 are provided in SEQ ID NOS: 30-40, respectively. Comparison of these sequences with those in the gene bank as described above, revealed no significant homologies to three of the five most abundant DNA species, (J1-17, L1-12 and N1-1862; SEQ ID NOS: 8-9, 10-11 and 12-13, respectively). Of the remaining two most abundant species, one (J1-12; SEQ ID NO:30) was found to be identical to the previously identified human pulmonary surfactant-associated protein, and the other (K1-48; SEQ ID NO:33) was determined to have some homology to *R. norvegicus* mRNA for 2-arylpropionyl-CoA epimerase. Of the 17 less abundant cDNA clones isolated from the subtracted prostate tumor specific cDNA library with spike, four (J1-16, K1-55, L1-6 and N1-1864; SEQ ID NOS:31, 34, 36 and 40, respectively) were found to be identical to previously identified sequences, two (J1-21 and N1-1860; SEQ ID NOS: 32 and 38, respectively) were found to show some homology to non-human sequences, and two (L1-2 and N1-1861; SEQ ID NOS: 35 and 39, respectively) were found to show some homology to known human sequences. No significant homologies were found to the polypeptides J1-13, J1-19, J1-24, J1-25, K1-58, K1-63, L1-4, L1-14 (SEQ ID NOS: 14-15, 16-17, 20-21, 18-19, 22-23, 24-25, 26-27, 28-29, respectively).

Subsequent studies led to the isolation of full length cDNA sequences for J1-17, L1-12 and N1-1862 (SEQ ID NOS: 109-111, respectively). The corresponding predicted

amino acid sequences are provided in SEQ ID NOS: 112-114. L1-12 is also referred to as P501S.

In a further experiment, four additional clones were identified by subtracting a prostate tumor cDNA library with normal prostate cDNA prepared from a pool of three normal prostate poly A+ RNA (referred to as "prostate subtraction 2"). The determined cDNA sequences for these clones, hereinafter referred to as U1-3064, U1-3065, V1-3692 and 1A-3905, are provided in SEQ ID NO: 69-72, respectively. Comparison of the determined sequences with those in the gene bank revealed no significant homologies to U1-3065.

A second subtraction with spike (referred to as "prostate subtraction spike 2") was performed by subtracting a prostate tumor specific cDNA library with spike with normal pancreas cDNA library and further spiked with PSA, J1-17, pulmonary surfactant-associated protein, mitochondrial DNA, cytochrome c oxidase subunit II, N1-1862, autonomously replicating sequence, L1-12 and tumor expression enhanced gene. Four additional clones, hereinafter referred to as V1-3686, R1-2330, 1B-3976 and V1-3679, were isolated. The determined cDNA sequences for these clones are provided in SEQ ID NO: 73-76, respectively. Comparison of these sequences with those in the gene bank revealed no significant homologies to V1-3686 and R1-2330.

Further analysis of the three prostate subtractions described above (prostate subtraction 2, subtracted prostate tumor specific cDNA library with spike, and prostate subtraction spike 2) resulted in the identification of sixteen additional clones, referred to as 1G-4736, 1G-4738, 1G-4741, 1G-4744, 1G-4734, 1H-4774, 1H-4781, 1H-4785, 1H-4787, 1H-4796, 1I-4810, 1I-4811, 1J-4876, 1K-4884 and 1K-4896. The determined cDNA sequences for these clones are provided in SEQ ID NOS: 77-92, respectively. Comparison of these sequences with those in the gene bank as described above, revealed no significant homologies to 1G-4741, 1G-4734, 1I-4807, 1J-4876 and 1K-4896 (SEQ ID NOS: 79, 81, 87, 90 and 92, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1G-4736, 1G-4738, 1G-4741, 1G-4744, 1H-4774, 1H-4781, 1H-4785, 1H-4787, 1H-4796, 1I-4807, 1J-4876, 1K-4884 and 1K-4896, provided in SEQ ID NOS: 179-188 and 191-193, respectively, and to the determination of additional partial cDNA sequences for 1I-4810 and 1I-4811, provided in SEQ ID NOS: 189 and 190, respectively.

Additional studies with prostate subtraction spike 2 resulted in the isolation of three more clones. Their sequences were determined as described above and compared to the most recent GenBank. All three clones were found to have homology to known genes, which are Cysteine-rich protein, KIAA0242, and KIAA0280 (SEQ ID NO: 317, 319, and 320, respectively). Further analysis of these clones by Synteni microarray (Synteni, Palo Alto, CA) demonstrated that all three clones were over-expressed in most prostate tumors and

prostate BPH, as well as in the majority of normal prostate tissues tested, but low expression in all other normal tissues.

An additional subtraction was performed by subtracting a normal prostate cDNA library with normal pancreas cDNA (referred to as "prostate subtraction 3"). This led to the identification of six additional clones referred to as 1G-4761, 1G-4762, 1H-4766, 1H-4770, 1H-4771 and 1H-4772 (SEQ ID NOS: 93-98). Comparison of these sequences with those in the gene bank revealed no significant homologies to 1G-4761 and 1H-4771 (SEQ ID NOS: 93 and 97, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1G-4761, 1G-4762, 1H-4766 and 1H-4772 provided in SEQ ID NOS: 194-196 and 199, respectively, and to the determination of additional partial cDNA sequences for 1H-4770 and 1H-4771, provided in SEQ ID NOS: 197 and 198, respectively.

Subtraction of a prostate tumor cDNA library, prepared from a pool of polyA+ RNA from three prostate cancer patients, with a normal pancreas cDNA library (prostate subtraction 4) led to the identification of eight clones, referred to as 1D-4297, 1D-4309, 1D.1-4278, 1D-4288, 1D-4283, 1D-4304, 1D-4296 and 1D-4280 (SEQ ID NOS: 99-107). These sequences were compared to those in the gene bank as described above. No significant homologies were found to 1D-4283 and 1D-4304 (SEQ ID NOS: 103 and 104, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1D-4309, 1D.1-4278, 1D-4288, 1D-4283, 1D-4304, 1D-4296 and 1D-4280, provided in SEQ ID NOS: 200-206, respectively.

cDNA clones isolated in prostate subtraction 1 and prostate subtraction 2, described above, were colony PCR amplified and their mRNA expression levels in prostate tumor, normal prostate and in various other normal tissues were determined using microarray technology (Synteni, Palo Alto, CA). Briefly, the PCR amplification products were dotted onto slides in an array format, with each product occupying a unique location in the array. mRNA was extracted from the tissue sample to be tested, reverse transcribed, and fluorescent-labeled cDNA probes were generated. The microarrays were probed with the labeled cDNA probes, the slides scanned and fluorescence intensity was measured. This intensity correlates with the hybridization intensity. Two clones (referred to as P509S and P510S) were found to be over-expressed in prostate tumor and normal prostate and expressed at low levels in all other normal tissues tested (liver, pancreas, skin, bone marrow, brain, breast, adrenal gland, bladder, testes, salivary gland, large intestine, kidney, ovary, lung, spinal cord, skeletal muscle and colon). The determined cDNA sequences for P509S and P510S are provided in SEQ ID NO: 223 and 224, respectively. Comparison of these sequences with those in the gene bank as described above, revealed some homology to previously identified ESTs.

Additional, studies led to the isolation of the full-length cDNA sequence for P509S. This sequence is provided in SEQ ID NO: 332, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 339.

EXAMPLE 2

DETERMINATION OF TISSUE SPECIFICITY OF PROSTATE TUMOR POLYPEPTIDES

Using gene specific primers, mRNA expression levels for the representative prostate tumor polypeptides F1-16, H1-1, J1-17 (also referred to as P502S), L1-12 (also referred to as P501S), F1-12 (also referred to as P504S) and N1-1862 (also referred to as P503S) were examined in a variety of normal and tumor tissues using RT-PCR.

Briefly, total RNA was extracted from a variety of normal and tumor tissues using Trizol reagent as described above. First strand synthesis was carried out using 1-2 μ g of total RNA with SuperScript II reverse transcriptase (BRL Life Technologies) at 42 °C for one hour. The cDNA was then amplified by PCR with gene-specific primers. To ensure the semi-quantitative nature of the RT-PCR, β -actin was used as an internal control for each of the tissues examined. First, serial dilutions of the first strand cDNAs were prepared and RT-PCR assays were performed using β -actin specific primers. A dilution was then chosen that enabled the linear range amplification of the β -actin template and which was sensitive enough to reflect the differences in the initial copy numbers. Using these conditions, the β -actin levels were determined for each reverse transcription reaction from each tissue. DNA contamination was minimized by DNase treatment and by assuring a negative PCR result when using first strand cDNA that was prepared without adding reverse transcriptase.

mRNA Expression levels were examined in four different types of tumor tissue (prostate tumor from 2 patients, breast tumor from 3 patients, colon tumor, lung tumor), and sixteen different normal tissues, including prostate, colon, kidney, liver, lung, ovary, pancreas, skeletal muscle, skin, stomach, testes, bone marrow and brain. F1-16 was found to be expressed at high levels in prostate tumor tissue, colon tumor and normal prostate, and at lower levels in normal liver, skin and testes, with expression being undetectable in the other tissues examined. H1-1 was found to be expressed at high levels in prostate tumor, lung tumor, breast tumor, normal prostate, normal colon and normal brain, at much lower levels in normal lung, pancreas, skeletal muscle, skin, small intestine, bone marrow, and was not detected in the other tissues tested. J1-17 (P502S) and L1-12 (P501S) appear to be specifically over-expressed in prostate, with both genes being expressed at high levels in prostate tumor and normal prostate but at low to undetectable levels in all the other tissues examined. N1-1862 (P503S) was found to be over-expressed in 60% of prostate tumors and detectable in normal colon and kidney. The RT-PCR results thus indicate that

F1-16, H1-1, J1-17 (P502S), N1-1862 (P503S) and L1-12 (P501S) are either prostate specific or are expressed at significantly elevated levels in prostate.

Further RT-PCR studies showed that F1-12 (P504S) is over-expressed in 60% of prostate tumors, detectable in normal kidney but not detectable in all other tissues tested. Similarly, R1-2330 was shown to be over-expressed in 40% of prostate tumors, detectable in normal kidney and liver, but not detectable in all other tissues tested. U1-3064 was found to be over-expressed in 60% of prostate tumors, and also expressed in breast and colon tumors, but was not detectable in normal tissues.

RT-PCR characterization of R1-2330, U1-3064 and 1D-4279 showed that these three antigens are over-expressed in prostate and/or prostate tumors.

Northern analysis with four prostate tumors, two normal prostate samples, two BPH prostates, and normal colon, kidney, liver, lung, pancreas, skeletal muscle, brain, stomach, testes, small intestine and bone marrow, showed that L1-12 (P501S) is over-expressed in prostate tumors and normal prostate, while being undetectable in other normal tissues tested. J1-17 (P502S) was detected in two prostate tumors and not in the other tissues tested. N1-1862 (P503S) was found to be over-expressed in three prostate tumors and to be expressed in normal prostate, colon and kidney, but not in other tissues tested. F1-12 (P504S) was found to be highly expressed in two prostate tumors and to be undetectable in all other tissues tested.

The microarray technology described above was used to determine the expression levels of representative antigens described herein in prostate tumor, breast tumor and the following normal tissues: prostate, liver, pancreas, skin, bone marrow, brain, breast, adrenal gland, bladder, testes, salivary gland, large intestine, kidney, ovary, lung, spinal cord, skeletal muscle and colon. L1-12 (P501S) was found to be over-expressed in normal prostate and prostate tumor, with some expression being detected in normal skeletal muscle. Both J1-12 and F1-12 (P504S) were found to be over-expressed in prostate tumor, with expression being lower or undetectable in all other tissues tested. N1-1862 (P503S) was found to be expressed at high levels in prostate tumor and normal prostate, and at low levels in normal large intestine and normal colon, with expression being undetectable in all other tissues tested. R1-2330 was found to be over-expressed in prostate tumor and normal prostate, and to be expressed at lower levels in all other tissues tested. 1D-4279 was found to be over-expressed in prostate tumor and normal prostate, expressed at lower levels in normal spinal cord, and to be undetectable in all other tissues tested.

Further microarray analysis to specifically address the extent to which P501S (SEQ ID NO: 110) was expressed in breast tumor revealed moderate over-expression not only in breast tumor, but also in metastatic breast tumor (2/31), with negligible to low expression

in normal tissues. This data suggests that P501S may be over-expressed in various breast tumors as well as in prostate tumors.

The expression levels of 32 ESTs (expressed sequence tags) described by Vasmatzis *et al.* (*Proc. Natl. Acad. Sci. USA* 95:300-304, 1998) in a variety of tumor and normal tissues were examined by microarray technology as described above. Two of these clones (referred to as P1000C and P1001C) were found to be over-expressed in prostate tumor and normal prostate, and expressed at low to undetectable levels in all other tissues tested (normal aorta, thymus, resting and activated PBMC, epithelial cells, spinal cord, adrenal gland, fetal tissues, skin, salivary gland, large intestine, bone marrow, liver, lung, dendritic cells, stomach, lymph nodes, brain, heart, small intestine, skeletal muscle, colon and kidney. The determined cDNA sequences for P1000C and P1001C are provided in SEQ ID NO: 384 and 472, respectively. The sequence of P1001C was found to show some homology to the previously isolated Human mRNA for JM27 protein. No significant homologies were found to the sequence of P1000C.

The expression of the polypeptide encoded by the full length cDNA sequence for F1-12 (also referred to as P504S; SEQ ID NO: 108) was investigated by immunohistochemical analysis. Rabbit-anti-P504S polyclonal antibodies were generated against the full length P504S protein by standard techniques. Subsequent isolation and characterization of the polyclonal antibodies were also performed by techniques well known in the art. Immunohistochemical analysis showed that the P504S polypeptide was expressed in 100% of prostate carcinoma samples tested (n=5).

The rabbit-anti-P504S polyclonal antibody did not appear to label benign prostate cells with the same cytoplasmic granular staining, but rather with light nuclear staining. Analysis of normal tissues revealed that the encoded polypeptide was found to be expressed in some, but not all normal human tissues. Positive cytoplasmic staining with rabbit-anti-P504S polyclonal antibody was found in normal human kidney, liver, brain, colon and lung-associated macrophages, whereas heart and bone marrow were negative.

This data indicates that the P504S polypeptide is present in prostate cancer tissues, and that there are qualitative and quantitative differences in the staining between benign prostatic hyperplasia tissues and prostate cancer tissues, suggesting that this polypeptide may be detected selectively in prostate tumors and therefore be useful in the diagnosis of prostate cancer.

EXAMPLE 3

ISOLATION AND CHARACTERIZATION OF PROSTATE TUMOR POLYPEPTIDES BY PCR-BASED SUBTRACTION

A cDNA subtraction library, containing cDNA from normal prostate subtracted with ten other normal tissue cDNAs (brain, heart, kidney, liver, lung, ovary, placenta, skeletal muscle, spleen and thymus) and then submitted to a first round of PCR amplification, was purchased from Clontech. This library was subjected to a second round of PCR amplification, following the manufacturer's protocol. The resulting cDNA fragments were subcloned into the vector pT7 Blue T-vector (Novagen, Madison, WI) and transformed into XL-1 Blue MRF' *E. coli* (Stratagene). DNA was isolated from independent clones and sequenced using a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A.

Fifty-nine positive clones were sequenced. Comparison of the DNA sequences of these clones with those in the gene bank, as described above, revealed no significant homologies to 25 of these clones, hereinafter referred to as P5, P8, P9, P18, P20, P30, P34, P36, P38, P39, P42, P49, P50, P53, P55, P60, P64, P65, P73, P75, P76, P79 and P84. The determined cDNA sequences for these clones are provided in SEQ ID NO: 41-45, 47-52 and 54-65, respectively. P29, P47, P68, P80 and P82 (SEQ ID NO: 46, 53 and 66-68, respectively) were found to show some degree of homology to previously identified DNA sequences. To the best of the inventors' knowledge, none of these sequences have been previously shown to be present in prostate.

Further studies using the PCR-based methodology described above resulted in the isolation of more than 180 additional clones, of which 23 clones were found to show no significant homologies to known sequences. The determined cDNA sequences for these clones are provided in SEQ ID NO: 115-123, 127, 131, 137, 145, 147-151, 153, 156-158 and 160. Twenty-three clones (SEQ ID NO: 124-126, 128-130, 132-136, 138-144, 146, 152, 154, 155 and 159) were found to show some homology to previously identified ESTs. An additional ten clones (SEQ ID NO: 161-170) were found to have some degree of homology to known genes. Larger cDNA clones containing the P20 sequence represent splice variants of a gene referred to as P703P. The determined DNA sequence for the variants referred to as DE1, DE13 and DE14 are provided in SEQ ID NOS: 171, 175 and 177, respectively, with the corresponding predicted amino acid sequences being provided in SEQ ID NO: 172, 176 and 178, respectively. The determined cDNA sequence for an extended spliced form of P703 is provided in SEQ ID NO: 225. The DNA sequences for the splice variants referred to as DE2 and DE6 are provided in SEQ ID NOS: 173 and 174, respectively.

mRNA Expression levels for representative clones in tumor tissues (prostate (n=5), breast (n=2), colon and lung) normal tissues (prostate (n=5), colon, kidney, liver, lung (n=2), ovary (n=2), skeletal muscle, skin, stomach, small intestine and brain), and activated

and non-activated PBMC was determined by RT-PCR as described above. Expression was examined in one sample of each tissue type unless otherwise indicated.

P9 was found to be highly expressed in normal prostate and prostate tumor compared to all normal tissues tested except for normal colon which showed comparable expression. P20, a portion of the P703P gene, was found to be highly expressed in normal prostate and prostate tumor, compared to all twelve normal tissues tested. A modest increase in expression of P20 in breast tumor (n=2), colon tumor and lung tumor was seen compared to all normal tissues except lung (1 of 2). Increased expression of P18 was found in normal prostate, prostate tumor and breast tumor compared to other normal tissues except lung and stomach. A modest increase in expression of P5 was observed in normal prostate compared to most other normal tissues. However, some elevated expression was seen in normal lung and PBMC. Elevated expression of P5 was also observed in prostate tumors (2 of 5), breast tumor and one lung tumor sample. For P30, similar expression levels were seen in normal prostate and prostate tumor, compared to six of twelve other normal tissues tested. Increased expression was seen in breast tumors, one lung tumor sample and one colon tumor sample, and also in normal PBMC. P29 was found to be over-expressed in prostate tumor (5 of 5) and normal prostate (5 of 5) compared to the majority of normal tissues. However, substantial expression of P29 was observed in normal colon and normal lung (2 of 2). P80 was found to be over-expressed in prostate tumor (5 of 5) and normal prostate (5 of 5) compared to all other normal tissues tested, with increased expression also being seen in colon tumor.

Further studies resulted in the isolation of twelve additional clones, hereinafter referred to as 10-d8, 10-h10, 11-c8, 7-g6, 8-b5, 8-b6, 8-d4, 8-d9, 8-g3, 8-h11, 9-f12 and 9-f3. The determined DNA sequences for 10-d8, 10-h10, 11-c8, 8-d4, 8-d9, 8-h11, 9-f12 and 9-f3 are provided in SEQ ID NO: 207, 208, 209, 216, 217, 220, 221 and 222, respectively. The determined forward and reverse DNA sequences for 7-g6, 8-b5, 8-b6 and 8-g3 are provided in SEQ ID NO: 210 and 211; 212 and 213; 214 and 215; and 218 and 219, respectively. Comparison of these sequences with those in the gene bank revealed no significant homologies to the sequence of 9-f3. The clones 10-d8, 11-c8 and 8-h11 were found to show some homology to previously isolated ESTs, while 10-h10, 8-b5, 8-b6, 8-d4, 8-d9, 8-g3 and 9-f12 were found to show some homology to previously identified genes. Further characterization of 7-G6 and 8-G3 showed identity to the known genes PAP and PSA, respectively.

mRNA expression levels for these clones were determined using the micro-array technology described above. The clones 7-G6, 8-G3, 8-B5, 8-B6, 8-D4, 8-D9, 9-F3, 9-F12, 9-H3, 10-A2, 10-A4, 11-C9 and 11-F2 were found to be over-expressed in prostate tumor and normal prostate, with expression in other tissues tested being low or undetectable.

Increased expression of 8-F11 was seen in prostate tumor and normal prostate, bladder, skeletal muscle and colon. Increased expression of 10-H10 was seen in prostate tumor and normal prostate, bladder, lung, colon, brain and large intestine. Increased expression of 9-B1 was seen in prostate tumor, breast tumor, and normal prostate, salivary gland, large intestine and skin, with increased expression of 11-C8 being seen in prostate tumor, and normal prostate and large intestine.

An additional cDNA fragment derived from the PCR-based normal prostate subtraction, described above, was found to be prostate specific by both micro-array technology and RT-PCR. The determined cDNA sequence of this clone (referred to as 9-A11) is provided in SEQ ID NO: 226. Comparison of this sequence with those in the public databases revealed 99% identity to the known gene HOXB13.

Further studies led to the isolation of the clones 8-C6 and 8-H7. The determined cDNA sequences for these clones are provided in SEQ ID NO: 227 and 228, respectively. These sequences were found to show some homology to previously isolated ESTs.

PCR and hybridization-based methodologies were employed to obtain longer cDNA sequences for clone P20 (also referred to as P703P), yielding three additional cDNA fragments that progressively extend the 5' end of the gene. These fragments, referred to as P703PDE5, P703P6.26, and P703PX-23 (SEQ ID NO: 326, 328 and 330, with the predicted corresponding amino acid sequences being provided in SEQ ID NO: 327, 329 and 331, respectively) contain additional 5' sequence. P703PDE5 was recovered by screening of a cDNA library (#141-26) with a portion of P703P as a probe. P703P6.26 was recovered from a mixture of three prostate tumor cDNAs and P703PX_23 was recovered from cDNA library (#438-48). Together, the additional sequences include all of the putative mature serine protease along with part of the putative signal sequence. Further studies using a PCR-based subtraction library of a prostate tumor pool subtracted against a pool of normal tissues (referred to as JP: PCR subtraction) resulted in the isolation of thirteen additional clones, seven of which did not share any significant homology to known GenBank sequences. The determined cDNA sequences for these seven clones (P711P, P712P, novel 23, P774P, P775P, P710P and P768P) are provided in SEQ ID NO: 307-311, 313 and 315, respectively. The remaining six clones (SEQ ID NO: 316 and 321-325) were shown to share some homology to known genes. By microarray analysis, all thirteen clones showed three or more fold over-expression in prostate tissues, including prostate tumors, BPH and normal prostate as compared to normal non-prostate tissues. Clones P711P, P712P, novel 23 and P768P showed over-expression in most prostate tumors and BPH tissues tested (n=29), and in the majority of normal prostate tissues (n=4), but background to low expression levels in all normal tissues.

Clones P774P, P775P and P710P showed comparatively lower expression and expression in fewer prostate tumors and BPH samples, with negative to low expression in normal prostate.

The full-length cDNA for P711P was obtained by employing the partial sequence of SEQ ID NO: 307 to screen a prostate cDNA library. Specifically, a directionally cloned prostate cDNA library was prepared using standard techniques. One million colonies of this library were plated onto LB/Amp plates. Nylon membrane filters were used to lift these colonies, and the cDNAs which were picked up by these filters were denatured and cross-linked to the filters by UV light. The P711P cDNA fragment of SEQ ID NO: 307 was radio-labeled and used to hybridize with these filters. Positive clones were selected, and cDNAs were prepared and sequenced using an automatic Perkin Elmer/Applied Biosystems sequencer. The determined full-length sequence of P711P is provided in SEQ ID NO: 382, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 383.

Using PCR and hybridization-based methodologies, additional cDNA sequence information was derived for two clones described above, 11-C9 and 9-F3, herein after referred to as P707P and P714P, respectively (SEQ ID NO: 333 and 334). After comparison with the most recent GenBank, P707P was found to be a splice variant of the known gene HoxB13. In contrast, no significant homologies to P714P were found.

Clones 8-B3, P89, P98, P130 and P201 (as disclosed in U.S. Patent Application No. 09/020,956, filed February 9, 1998) were found to be contained within one contiguous sequence, referred to as P705P (SEQ ID NO: 335, with the predicted amino acid sequence provided in SEQ ID NO: 336), which was determined to be a splice variant of the known gene NKX 3.1.

EXAMPLE 4 SYNTHESIS OF POLYPEPTIDES

Polypeptides may be synthesized on a Perkin Elmer/Applied Biosystems 430A peptide synthesizer using Fmoc chemistry with HPTU (O-Benzotriazole-N,N,N',N'-tetramethyluronium hexafluorophosphate) activation. A Gly-Cys-Gly sequence may be attached to the amino terminus of the peptide to provide a method of conjugation, binding to an immobilized surface, or labeling of the peptide. Cleavage of the peptides from the solid support may be carried out using the following cleavage mixture: trifluoroacetic acid:ethanedithiol:thioanisole:water:phenol (40:1:2:2:3). After cleaving for 2 hours, the peptides may be precipitated in cold methyl-t-butyl-ether. The peptide pellets may then be dissolved in water containing 0.1% trifluoroacetic acid (TFA) and lyophilized prior to purification by C18 reverse phase HPLC. A gradient of 0%-60% acetonitrile (containing 0.1% TFA) in water (containing 0.1% TFA) may be used to elute the peptides. Following

lyophilization of the pure fractions, the peptides may be characterized using electrospray or other types of mass spectrometry and by amino acid analysis.

EXAMPLE 5

FURTHER ISOLATION AND CHARACTERIZATION OF PROSTATE TUMOR POLYPEPTIDES BY PCR-BASED SUBTRACTION

A cDNA library generated from prostate primary tumor mRNA as described above was subtracted with cDNA from normal prostate. The subtraction was performed using a PCR-based protocol (Clontech), which was modified to generate larger fragments. Within this protocol, tester and driver double stranded cDNA were separately digested with five restriction enzymes that recognize six-nucleotide restriction sites (MluI, MscI, PvuII, Sall and StuI). This digestion resulted in an average cDNA size of 600 bp, rather than the average size of 300 bp that results from digestion with RsaI according to the Clontech protocol. This modification did not affect the subtraction efficiency. Two tester populations were then created with different adapters, and the driver library remained without adapters.

The tester and driver libraries were then hybridized using excess driver cDNA. In the first hybridization step, driver was separately hybridized with each of the two tester cDNA populations. This resulted in populations of (a) unhybridized tester cDNAs, (b) tester cDNAs hybridized to other tester cDNAs, (c) tester cDNAs hybridized to driver cDNAs and (d) unhybridized driver cDNAs. The two separate hybridization reactions were then combined, and rehybridized in the presence of additional denatured driver cDNA. Following this second hybridization, in addition to populations (a) through (d), a fifth population (e) was generated in which tester cDNA with one adapter hybridized to tester cDNA with the second adapter. Accordingly, the second hybridization step resulted in enrichment of differentially expressed sequences which could be used as templates for PCR amplification with adaptor-specific primers.

The ends were then filled in, and PCR amplification was performed using adaptor-specific primers. Only population (e), which contained tester cDNA that did not hybridize to driver cDNA, was amplified exponentially. A second PCR amplification step was then performed, to reduce background and further enrich differentially expressed sequences.

This PCR-based subtraction technique normalizes differentially expressed cDNAs so that rare transcripts that are overexpressed in prostate tumor tissue may be recoverable. Such transcripts would be difficult to recover by traditional subtraction methods.

In addition to genes known to be overexpressed in prostate tumor, seventy-seven further clones were identified. Sequences of these partial cDNAs are provided in SEQ ID NO: 29 to 305. Most of these clones had no significant homology to database sequences. Exceptions were JPTPN23 (SEQ ID NO: 231; similarity to pig valosin-containing protein), JPTPN30 (SEQ ID NO: 234; similarity to rat mRNA for proteasome subunit), JPTPN45 (SEQ ID NO: 243; similarity to rat *norvegicus* cytosolic NADP-dependent isocitrate dehydrogenase), JPTPN46 (SEQ ID NO: 244; similarity to human subclone H8 4 d4 DNA sequence), JP1D6 (SEQ ID NO: 265; similarity to *G. gallus* dynein light chain-A), JP8D6 (SEQ ID NO: 288; similarity to human BAC clone RG016J04), JP8F5 (SEQ ID NO: 289; similarity to human subclone H8 3 b5 DNA sequence), and JP8E9 (SEQ ID NO: 299; similarity to human Alu sequence).

Additional studies using the PCR-based subtraction library consisting of a prostate tumor pool subtracted against a normal prostate pool (referred to as PT-PN PCR subtraction) yielded three additional clones. Comparison of the cDNA sequences of these clones with the most recent release of GenBank revealed no significant homologies to the two clones referred to as P715P and P767P (SEQ ID NO: 312 and 314). The remaining clone was found to show some homology to the known gene KIAA0056 (SEQ ID NO: 318). Using microarray analysis to measure mRNA expression levels in various tissues, all three clones were found to be over-expressed in prostate tumors and BPH tissues. Specifically, clone P715P was over-expressed in most prostate tumors and BPH tissues by a factor of three or greater, with elevated expression seen in the majority of normal prostate samples and in fetal tissue, but negative to low expression in all other normal tissues. Clone P767P was over-expressed in several prostate tumors and BPH tissues, with moderate expression levels in half of the normal prostate samples, and background to low expression in all other normal tissues tested.

Further analysis, by microarray as described above, of the PT-PN PCR subtraction library and of a DNA subtraction library containing cDNA from prostate tumor subtracted with a pool of normal tissue cDNAs, led to the isolation of 27 additional clones (SEQ ID NO: 340-365 and 381) which were determined to be over-expressed in prostate tumor. The clones of SEQ ID NO: 341, 342, 345, 347, 348, 349, 351, 355-359, 361, 362 and 364 were also found to be expressed in normal prostate. Expression of all 26 clones in a variety of normal tissues was found to be low or undetectable, with the exception of P544S (SEQ ID NO: 356) which was found to be expressed in small intestine. Of the 26 clones, 10 (SEQ ID NO: 340-349) were found to show some homology to previously identified sequences. No significant homologies were found to the clones of SEQ ID NO: 350-365.

EXAMPLE 6

PEPTIDE PRIMING OF MICE AND PROPAGATION OF CTL LINES

6.1. This Example illustrates the preparation of a CTL cell line specific for cells expressing the P502S gene.

Mice expressing the transgene for human HLA A2.1 (provided by Dr L. Sherman, The Scripps Research Institute, La Jolla, CA) were immunized with P2S#12 peptide (VLGWVAEL; SEQ ID NO: 306), which is derived from the P502S gene (also referred to herein as J1-17, SEQ ID NO: 8), as described by Theobald et al., *Proc. Natl. Acad. Sci. USA* 92:11993-11997, 1995 with the following modifications. Mice were immunized with 100µg of P2S#12 and 120µg of an I-A^b binding peptide derived from hepatitis B Virus protein emulsified in incomplete Freund's adjuvant. Three weeks later these mice were sacrificed and using a nylon mesh single cell suspensions prepared. Cells were then resuspended at 6×10^6 cells/ml in complete media (RPMI-1640; Gibco BRL, Gaithersburg, MD) containing 10% FCS, 2mM Glutamine (Gibco BRL), sodium pyruvate (Gibco BRL), non-essential amino acids (Gibco BRL), 2×10^{-5} M 2-mercaptoethanol, 50U/ml penicillin and streptomycin, and cultured in the presence of irradiated (3000 rads) P2S#12-pulsed (5mg/ml P2S#12 and 10mg/ml β2-microglobulin) LPS blasts (A2 transgenic spleens cells cultured in the presence of 7µg/ml dextran sulfate and 25µg/ml LPS for 3 days). Six days later, cells (5×10^5 /ml) were restimulated with 2.5×10^6 /ml peptide pulsed irradiated (20,000 rads) EL4A2Kb cells (Sherman et al, *Science* 258:815-818, 1992) and 3×10^6 /ml A2 transgenic spleen feeder cells. Cells were cultured in the presence of 20U/ml IL-2. Cells continued to be restimulated on a weekly basis as described, in preparation for cloning the line.

P2S#12 line was cloned by limiting dilution analysis with peptide pulsed EL4 A2Kb tumor cells (1×10^4 cells/ well) as stimulators and A2 transgenic spleen cells as feeders (5×10^5 cells/ well) grown in the presence of 30U/ml IL-2. On day 14, cells were

restimulated as before. On day 21, clones that were growing were isolated and maintained in culture. Several of these clones demonstrated significantly higher reactivity (lysis) against human fibroblasts (HLA A2.1 expressing) transduced with P502S than against control fibroblasts. An example is presented in Figure 1.

This data indicates that P2S #12 represents a naturally processed epitope of the P502S protein that is expressed in the context of the human HLA A2.1 molecule.

6.2. This Example illustrates the preparation of murine CTL lines and CTL clones specific for cells expressing the P501S gene.

This series of experiments were performed similarly to that described above. Mice were immunized with the P1S#10 peptide (SEQ ID NO: 337), which is derived from the P501S gene (also referred to herein as L1-12, SEQ ID NO: 110). The P1S#10 peptide was derived by analysis of the predicted polypeptide sequence for P501S for potential HLA-A2 binding sequences as defined by published HLA-A2 binding motifs (Parker, KC, *et al*, *J. Immunol.*, 152:163, 1994). P1S#10 peptide was synthesized as described in Example 4, and empirically tested for HLA-A2 binding using a T cell based competition assay. Predicted A2 binding peptides were tested for their ability to compete HLA-A2 specific peptide presentation to an HLA-A2 restricted CTL clone (D150M58), which is specific for the HLA-A2 binding influenza matrix peptide fluM58. D150M58 CTL secretes TNF in response to self-presentation of peptide fluM58. In the competition assay, test peptides at 100-200 $\mu\text{g/ml}$ were added to cultures of D150M58 CTL in order to bind HLA-A2 on the CTL. After thirty minutes, CTL cultured with test peptides, or control peptides, were tested for their antigen dose response to the fluM58 peptide in a standard TNF bioassay. As shown in Figure 3, peptide P1S#10 competes HLA-A2 restricted presentation of fluM58, demonstrating that peptide P1S#10 binds HLA-A2.

Mice expressing the transgene for human HLA A2.1 were immunized as described by Theobald et al. (*Proc. Natl. Acad. Sci. USA* 92:11993-11997, 1995) with the following modifications. Mice were immunized with 62.5 μg of P1S #10 and 120 μg of an I-A^b binding peptide derived from Hepatitis B Virus protein emulsified in incomplete Freund's adjuvant. Three weeks later these mice were sacrificed and single cell suspensions prepared using a nylon mesh. Cells were then resuspended at 6×10^6 cells/ml in complete media (as described above) and cultured in the presence of irradiated (3000 rads) P1S#10-pulsed (2 $\mu\text{g/ml}$ P1S#10 and 10mg/ml β 2-microglobulin) LPS blasts (A2 transgenic spleens cells cultured in the presence of 7 $\mu\text{g/ml}$ dextran sulfate and 25 $\mu\text{g/ml}$ LPS for 3 days). Six days later cells (5×10^5 /ml) were restimulated with 2.5×10^6 /ml peptide-pulsed irradiated (20,000 rads) EL4A2Kb cells, as described above, and 3×10^6 /ml A2 transgenic spleen feeder cells. Cells were cultured in the presence of 20 U/ml IL-2. Cells were restimulated on a weekly

basis in preparation for cloning. After three rounds of *in vitro* stimulations, one line was generated that recognized P1S#10-pulsed Jurkat A2Kb targets and P501S-transduced Jurkat targets as shown in Figure 4.

A P1S#10-specific CTL line was cloned by limiting dilution analysis with peptide pulsed EL4 A2Kb tumor cells (1×10^4 cells/ well) as stimulators and A2 transgenic spleen cells as feeders (5×10^5 cells/ well) grown in the presence of 30U/ml IL-2. On day 14, cells were restimulated as before. On day 21, viable clones were isolated and maintained in culture. As shown in Figure 5, five of these clones demonstrated specific cytolytic reactivity against P501S-transduced Jurkat A2Kb targets. This data indicates that P1S#10 represents a naturally processed epitope of the P501S protein that is expressed in the context of the human HLA-A2.1 molecule.

EXAMPLE 7

ABILITY OF HUMAN T CELLS TO RECOGNIZE PROSTATE TUMOR POLYPEPTIDES

This Example illustrates the ability of T cells specific for a prostate tumor polypeptide to recognize human tumor.

Human CD8⁺ T cells were primed *in vitro* to the P2S-12 peptide (SEQ ID NO: 306) derived from P502S (also referred to as J1-17) using dendritic cells according to the protocol of Van Tsai et al. (*Critical Reviews in Immunology* 18:65-75, 1998). The resulting CD8⁺ T cell microcultures were tested for their ability to recognize the P2S-12 peptide presented by autologous fibroblasts or fibroblasts which were transduced to express the P502S gene in a γ -interferon ELISPOT assay (see Lalvani et al., *J. Exp. Med.* 186:859-865, 1997). Briefly, titrating numbers of T cells were assayed in duplicate on 10^4 fibroblasts in the presence of 3 μ g/ml human β_2 -microglobulin and 1 μ g/ml P2S-12 peptide or control E75 peptide. In addition, T cells were simultaneously assayed on autologous fibroblasts transduced with the P502S gene or as a control, fibroblasts transduced with HER-2/*neu*. Prior to the assay, the fibroblasts were treated with 10 ng/ml γ -interferon for 48 hours to upregulate class I MHC expression. One of the microcultures (#5) demonstrated strong recognition of both peptide pulsed fibroblasts as well as transduced fibroblasts in a γ -interferon ELISPOT assay. Figure 2A demonstrates that there was a strong increase in the number of γ -interferon spots with increasing numbers of T cells on fibroblasts pulsed with the P2S-12 peptide (solid bars) but not with the control E75 peptide (open bars). This shows the ability of these T cells to specifically recognize the P2S-12 peptide. As shown in Figure 2B, this microculture also demonstrated an increase in the number of γ -interferon spots with increasing numbers of T

cells on fibroblasts transduced to express the P502S gene but not the HER-2/*neu* gene. These results provide additional confirmatory evidence that the P2S-12 peptide is a naturally processed epitope of the P502S protein. Furthermore, this also demonstrates that there exists in the human T cell repertoire, high affinity T cells which are capable of recognizing this epitope. These T cells should also be capable of recognizing human tumors which express the P502S gene.

EXAMPLE 8

PRIMING OF CTL *IN VIVO* USING NAKED DNA IMMUNIZATION WITH A PROSTATE ANTIGEN

The prostate tumor antigen L1-12, as described above, is also referred to as P501S. HLA A2Kb Tg mice (provided by Dr L. Sherman, The Scripps Research Institute, La Jolla, CA) were immunized with 100 µg VR10132-P501S either intramuscularly or intradermally. The mice were immunized three times, with a two week interval between immunizations. Two weeks after the last immunization, immune spleen cells were cultured with Jurkat A2Kb-P501S transduced stimulator cells. CTL lines were stimulated weekly. After two weeks of *in vitro* stimulation, CTL activity was assessed against P501S transduced targets. Two out of 8 mice developed strong anti-P501S CTL responses. These results demonstrate that P501S contains at least one naturally processed A2-restricted CTL epitope.

EXAMPLE 9

GENERATION OF HUMAN CTL *IN VITRO* USING WHOLE GENE PRIMING AND STIMULATION TECHNIQUES WITH PROSTATE TUMOR ANTIGEN

Using *in vitro* whole-gene priming with P501S-retrovirally transduced autologous fibroblasts (see, for example, Yee et al, *The Journal of Immunology*, 157(9):4079-86, 1996), human CTL lines were derived that specifically recognize autologous fibroblasts transduced with P501S (also known as L1-12), as determined by interferon-γ ELISPOT analysis as described above. Using a panel of HLA-mismatched fibroblast lines transduced with P501S, these CTL lines were shown to be restricted HLA-A2 class I allele. Specifically, dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal human donors by growing for five days in RPMI medium containing 10% human serum, 50 ng/ml human GM-CSF and 30 ng/ml human IL-4. Following culture, DC were infected overnight with recombinant P501S vaccinia virus at a multiplicity of infection (M.O.I) of five, and matured overnight by the addition of 3 µg/ml CD40 ligand. Virus was inactivated by UV irradiation. CD8+ T cells were isolated using a magnetic bead system, and

priming cultures were initiated using standard culture techniques. Cultures were restimulated every 7-10 days using autologous primary fibroblasts retrovirally transduced with P501S. Following four stimulation cycles, CD8+ T cell lines were identified that specifically produced interferon- γ when stimulated with P501S-transduced autologous fibroblasts. The P501S-specific activity could be sustained by the continued stimulation of the cultures with P501S-transduced fibroblasts in the presence of IL-15. A panel of HLA-mismatched fibroblast lines transduced with P501S were generated to define the restriction allele of the response. By measuring interferon- γ in an ELISPOT assay, the P501S specific response was shown to be restricted by HLA-A2. These results demonstrate that a CD8+ CTL response to P501S can be elicited.

EXAMPLE 10

IDENTIFICATION OF A NATURALLY PROCESSED CTL EPITOPE CONTAINED WITHIN A PROSTATE TUMOR ANTIGEN

The 9-mer peptide p5 (SEQ ID NO: 338) was derived from the P703P antigen (also referred to as P20). The p5 peptide is immunogenic in human HLA-A2 donors and is a naturally processed epitope. Antigen specific CD8+ T cells can be primed following repeated *in vitro* stimulations with monocytes pulsed with p5 peptide. These CTL specifically recognize p5-pulsed target cells in both ELISPOT (as described above) and chromium release assays. Additionally, immunization of HLA-A2 transgenic mice with p5 leads to the generation of CTL lines which recognize a variety of P703P transduced target cells expressing either HLA-A2Kb or HLA-A2. Specifically, HLA-A2 transgenic mice were immunized subcutaneously in the footpad with 100 μ g of p5 peptide together with 140 μ g of hepatitis B virus core peptide (a Th peptide) in Freund's incomplete adjuvant. Three weeks post immunization, spleen cells from immunized mice were stimulated *in vitro* with peptide-pulsed LPS blasts. CTL activity was assessed by chromium release assay five days after primary *in vitro* stimulation. Retrovirally transduced cells expressing the control antigen P703P and HLA-A2Kb were used as targets. CTL lines that specifically recognized both p5-pulsed targets as well as P703P-expressing targets were identified.

Human *in vitro* priming experiments demonstrated that the p5 peptide is immunogenic in humans. Dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal human donors by culturing for five days in RPMI medium containing 10% human serum, 50 ng/ml human GM-CSF and 30 ng/ml human IL-4. Following culture, the DC were pulsed with p5 peptide and cultured with GM-CSF and IL-4 together with CD8+ T cell enriched PBMC. CTL lines were restimulated on a weekly basis

with p5-pulsed monocytes. Five to six weeks after initiation of the CTL cultures, CTL recognition of p5-pulsed target cells was demonstrated.

EXAMPLE 11

EXPRESSION OF A BREAST TUMOR-DERIVED ANTIGEN IN PROSTATE

Isolation of the antigen B305D from breast tumor by differential display is described in US Patent Application No. 08/700,014, filed August 20, 1996. Several different splice forms of this antigen were isolated. The determined cDNA sequences for these splice forms are provided in SEQ ID NO: 366-375, with the predicted amino acid sequences corresponding to the sequences of SEQ ID NO: 292, 298 and 301-303 being provided in SEQ ID NO: 299-306, respectively.

The expression levels of B305D in a variety of tumor and normal tissues were examined by real time PCR and by Northern analysis. The results indicated that B305D is highly expressed in breast tumor, prostate tumor, normal prostate tumor and normal testes, with expression being low or undetectable in all other tissues examined (colon tumor, lung tumor, ovary tumor, and normal bone marrow, colon, kidney, liver, lung, ovary, skin, small intestine, stomach).

EXAMPLE 12

ELICITATION OF PROSTATE TUMOR ANTIGEN-SPECIFIC CTL RESPONSES IN HUMAN BLOOD

This Example illustrates the ability of a prostate tumor antigen to elicit a CTL response in blood of normal humans.

Autologous dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal donors by growth for five days in RPMI medium containing 10% human serum, 50 ng/ml GMCSF and 30 ng/ml IL-4. Following culture, DC were infected overnight with recombinant P501S-expressing vaccinia virus at an M.O.I. of 5 and matured for 8 hours by the addition of 2 micrograms/ml CD40 ligand. Virus was inactivated by UV irradiation, CD8⁺ cells were isolated by positive selection using magnetic beads, and priming cultures were initiated in 24-well plates. Following five stimulation cycles, CD8⁺ lines were identified that specifically produced interferon-gamma when stimulated with autologous P501S-transduced fibroblasts. The P501S-specific activity of cell line 3A-1 could be maintained following additional stimulation cycles on autologous B-LCL transduced with P501S. Line 3A-1 was shown to specifically recognize autologous B-LCL transduced to

express P501S, but not EGFP-transduced autologous B-LCL, as measured by cytotoxicity assays (^{51}Cr release) and interferon-gamma production (Interferon-gamma Elispot; *see above* and Lalvani et al., *J. Exp. Med.* 186:859-865, 1997). The results of these assays are presented in Figures 6A and 6B.

EXAMPLE 13

IDENTIFICATION OF PROSTATE TUMOR ANTIGENS BY MICROARRAY ANALYSIS

This Example describes the isolation of certain prostate tumor polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library as described above was screened using microarray analysis to identify clones that display at least a three fold over-expression in prostate tumor and/or normal prostate tissue, as compared to non-prostate normal tissues (not including testis). 372 clones were identified, and 319 were successfully sequenced. Table I presents a summary of these clones, which are shown in SEQ ID NOs:385-400. Of these sequences SEQ ID NOs:386, 389, 390 and 392 correspond to novel genes, and SEQ ID NOs: 393 and 396 correspond to previously identified sequences. The others (SEQ ID NOs:385, 387, 388, 391, 394, 395 and 397-400) correspond to known sequences, as shown in Table I.

Table I
Summary of Prostate Tumor Antigens

Known Genes	Previously identified Genes	Novel Genes
T-cell gamma chain	P504S	23379 (SEQ ID NO:389)
Kallikrein	P1000C	23399 (SEQ ID NO:392)
Vector	P501S	23320 (SEQ ID NO:386)
CGI-82 protein mRNA (23319; SEQ ID NO:385)	P503S	23381 (SEQ ID NO:390)
PSA	P510S	
Ald. 6 Dehyd.	P784P	
L-idoitol-2 dehydrogenase (23376; SEQ ID NO:388)	P502S	
Ets transcription factor PDEF (22672; SEQ ID NO:398)	P706P	
hTGR (22678; SEQ ID NO:399)	19142.2, bangur.seq (22621; SEQ ID NO:396)	
KIAA0295(22685; SEQ ID NO:400)	5566.1 Wang(23404; SEQ ID NO:393)	
Prostatic Acid Phosphatase(22655; SEQ ID NO:397)	P712P	

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transglutaminase (22611; SEQ ID NO:395)	P778P	
HDLBP (23508; SEQ ID NO:394)		
CGI-69 Protein(23367; SEQ ID NO:387)		
KIAA0122(23383; SEQ ID NO:391)		
TEEG		

CGI-82 showed 4.06 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 43% of prostate tumors, 25% normal prostate, not detected in other normal tissues tested. L-iditol-2 dehydrogenase showed 4.94 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 90% of prostate tumors, 100% of normal prostate, and not detected in other normal tissues tested. Ets transcription factor PDEF showed 5.55 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 47% prostate tumors, 25% normal prostate and not detected in other normal tissues tested. hTGR1 showed 9.11 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 63% of prostate tumors and is not detected in normal tissues tested including normal prostate. KIAA0295 showed 5.59 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 47% of prostate tumors, low to undetectable in normal tissues tested including normal prostate tissues. Prostatic acid phosphatase showed 9.14 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 67% of prostate tumors, 50% of normal prostate, and not detected in other normal tissues tested. Transglutaminase showed 14.84 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 30% of prostate tumors, 50% of normal prostate, and is not detected in other normal tissues tested. High density lipoprotein binding protein (HDLBP) showed 28.06 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors, 75% of normal prostate, and is undetectable in all other normal tissues tested. CGI-69 showed 3.56 fold over-expression in prostate tissues as compared to other normal tissues tested. It is a low abundant gene, detected in more than 90% of prostate tumors, and in 75% normal prostate tissues. The expression of this gene in normal tissues was very low. KIAA0122 showed 4.24 fold over-expression in prostate

tissues as compared to other normal tissues tested. It was over-expressed in 57% of prostate tumors, it was undetectable in all normal tissues tested including normal prostate tissues. 19142.2 bangur showed 23.25 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors and 100% of normal prostate. It was undetectable in other normal tissues tested. 5566.1 Wang showed 3.31 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors, 75% normal prostate and was also over-expressed in normal bone marrow, pancreas, and activated PBMC. Novel clone 23379 showed 4.86 fold over-expression in prostate tissues as compared to other normal tissues tested. It was detectable in 97% of prostate tumors and 75% normal prostate and is undetectable in all other normal tissues tested. Novel clone 23399 showed 4.09 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 27% of prostate tumors and was undetectable in all normal tissues tested including normal prostate tissues. Novel clone 23320 showed 3.15 fold over-expression in prostate tissues as compared to other normal tissues tested. It was detectable in all prostate tumors and 50% of normal prostate tissues. It was also expressed in normal colon and trachea. Other normal tissues do not express this gene at high level.

EXAMPLE 14

IDENTIFICATION OF PROSTATE TUMOR ANTIGENS BY ELECTRONIC SUBTRACTION

This Example describes the use of an electronic subtraction technique to identify prostate tumor antigens.

Potential prostate-specific genes present in the GenBank human EST database were identified by electronic subtraction (similar to that described by Vasmatizis et al., *Proc. Natl. Acad. Sci. USA* 95:300-304, 1998). The sequences of EST clones (43,482) derived from various prostate libraries were obtained from the GenBank public human EST database. Each prostate EST sequence was used as a query sequence in a BLASTN (National Center for Biotechnology Information) search against the human EST database. All matches considered identical (length of matching sequence >100 base pairs, density of identical matches over this region > 70%) were grouped (aligned) together in a cluster. Clusters containing more than 200 ESTs were discarded since they probably represented repetitive elements or highly expressed genes such as those for ribosomal proteins. If two or more clusters shared common ESTs, those clusters were grouped together into a "supercluster," resulting in 4,345 prostate superclusters.

Records for the 479 human cDNA libraries represented in the GenBank release were downloaded to create a database of these cDNA library records. These 479 cDNA libraries were grouped into three groups, Plus (normal prostate and prostate tumor libraries, and breast cell lines, in which expression was desired), Minus (libraries from other normal adult tissues, in which expression was not desirable), and Other (fetal tissue, infant tissue, tissues found only in women, non-prostate tumors and cell lines other than prostate cell lines, in which expression was considered to be irrelevant). A summary of these library groups is presented in Table II.

Table II
Prostate cDNA Libraries and ESTs

Library	# of Libraries	# of ESTs
Plus	25	43,482
Normal	11	18,875
Tumor	11	21,769
Cell lines	3	2,838
Minus	166	
Other	287	

Each supercluster was analyzed in terms of the ESTs within the supercluster. The tissue source of each EST clone was noted and used to classify the superclusters into four groups: Type 1- EST clones found in the Plus group libraries only; no expression detected in Minus or Other group libraries; Type 2- EST clones found in the Plus and Other group libraries only; no expression detected in the Minus group; Type 3- EST clones found in the Plus, Minus and Other group libraries, but the expression in the Plus group is higher than in either the Minus or Other groups; and Type 4- EST clones found in Plus, Minus and Other group libraries, but the expression in the Plus group is higher than the expression in the Minus group. This analysis identified 4,345 breast clusters (*see* Table III). From these clusters, 3,172 EST clones were ordered from Research Genetics, Inc., and were received as frozen glycerol stocks in 96-well plates.

Table III
Prostate Cluster Summary

Type	# of Superclusters	# of ESTs Ordered
1	688	677
2	2899	2484
3	85	11
4	673	0
Total	4345	3172

The inserts were PCR-amplified using amino-linked PCR primers for Synteni microarray analysis. When more than one PCR product was obtained for a particular clone, that PCR product was not used for expression analysis. In total, 2,528 clones from the electronic subtraction method were analyzed by microarray analysis to identify electronic subtraction breast clones that had high tumor vs. normal tissue mRNA. Such screens were performed using a Synteni (Palo Alto, CA) microarray, according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997). Within these analyses, the clones were arrayed on the chip, which was then probed with fluorescent probes generated from normal and tumor prostate cDNA, as well as various other normal tissues. The slides were scanned and the fluorescence intensity was measured.

Clones with an expression ratio greater than 3 (*i.e.*, the level in prostate tumor cDNA was at least three times the level in normal prostate cDNA) were identified as prostate tumor-specific sequences (Table IV). The sequences of these clones are provided in SEQ ID NOs:401-453, with certain novel sequences shown in SEQ ID NOs:407, 413, 416-419, 422, 426, 427 and 450.

Table IV
Prostate-tumor Specific Clones

SEQ ID NO.	Sequence Designation	Comments
401	22545	previously identified P1000C
402	22547	previously identified P704P

403	22548	known
404	22550	known
405	22551	PSA
406	22552	prostate secretory protein 94
407	22553	novel
408	22558	previously identified P509S
409	22562	glandular kallikrein
410	22565	previously identified P1000C
411	22567	PAP
412	22568	B1006C (breast tumor antigen)
413	22570	novel
414	22571	PSA
415	22572	previously identified P706P
416	22573	novel
417	22574	novel
418	22575	novel
419	22580	novel
420	22581	PAP
421	22582	prostatic secretory protein 94
422	22583	novel
423	22584	prostatic secretory protein 94
424	22585	prostatic secretory protein 94
425	22586	known
426	22587	novel
427	22588	novel
428	22589	PAP
429	22590	known
430	22591	PSA
431	22592	known
432	22593	Previously identified P777P
433	22594	T cell receptor gamma chain
434	22595	Previously identified P705P
435	22596	Previously identified P707P
436	22847	PAP
437	22848	known
438	22849	prostatic secretory protein 57

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439	22851	PAP
440	22852	PAP
441	22853	PAP
442	22854	previously identified P509S
443	22855	previously identified P705P
444	22856	previously identified P774P
445	22857	PSA
446	23601	previously identified P777P
447	23602	PSA
448	23605	PSA
449	23606	PSA
450	23612	novel
451	23614	PSA
452	23618	previously identified P1000C
453	23622	previously identified P705P

EXAMPLE 15

FURTHER IDENTIFICATION OF PROSTATE TUMOR ANTIGENS BY MICROARRAY ANALYSIS

This Example describes the isolation of additional prostate tumor polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library as described above was screened using microarray analysis to identify clones that display at least a three fold over-expression in prostate tumor and/or normal prostate tissue, as compared to non-prostate normal tissues (not including testis). 142 clones were identified and sequenced. Certain of these clones are shown in SEQ ID NOs:454-467. Of these sequences SEQ ID NOs:459-461 correspond to novel genes. The others (SEQ ID NOs:454-458 and 461-467) correspond to known sequences.

EXAMPLE 16

FURTHER CHARACTERIZATION OF PROSTATE TUMOR ANTIGEN P710P

This Example describes the full length cloning of P710P.

The prostate cDNA library described above was screened with the P710P fragment described above. One million colonies were plated on LB/Ampicillin plates. Nylon membrane filters were used to lift these colonies, and the cDNAs picked up by these filters were then denatured and cross-linked to the filters by UV light. The P710P fragment was radiolabeled and used to hybridize with the filters. Positive cDNA clones were selected and their cDNAs recovered and sequenced by an automatic ABI Sequencer. Four sequences were obtained, and are presented in SEQ ID NOs:468-471.

From the foregoing, it will be appreciated that, although specific embodiments of the invention have been described herein for the purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the present invention is not limited except as by the appended claims.

CLAIMS

1. An isolated polypeptide comprising at least an immunogenic portion of a prostate tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(a) sequences recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472;

(b) sequences that hybridize to any of the foregoing sequences under moderately stringent conditions; and

(c) complements of any of the sequence of (a) or (b).

2. An isolated polypeptide according to claim 1, wherein the polypeptide comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing polynucleotide sequences.

3. An isolated polypeptide comprising a sequence recited in any one of SEQ ID NO: 108, 112, 113, 114, 172, 176, 178, 327, 329, 331, 339 and 383.

4. An isolated polynucleotide encoding at least 15 amino acid residues of a prostate tumor protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434,

435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing sequences.

5. An isolated polynucleotide encoding a prostate tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing sequences.

6. An isolated polynucleotide comprising a sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472.

7. An isolated polynucleotide comprising a sequence that hybridizes, under moderately stringent conditions, to a sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472.

8. An isolated polynucleotide complementary to a polynucleotide according to any one of claims 4-7.

9. An expression vector comprising a polynucleotide according to any one of claims 4-7.

10. A host cell transformed or transfected with an expression vector according to claim 9.

11. An expression vector comprising a polynucleotide according claim 8.

12. A host cell transformed or transfected with an expression vector according to claim 11.

13. A pharmaceutical composition comprising a polypeptide according to claim 1, in combination with a physiologically acceptable carrier.

14. A vaccine comprising a polypeptide according to claim 1, in combination with a non-specific immune response enhancer.

15. A vaccine according to claim 14, wherein the non-specific immune response enhancer is an adjuvant.

16. A vaccine according to claim 14, wherein the non-specific immune response enhancer induces a predominantly Type I response.

17. A pharmaceutical composition comprising a polynucleotide according to claim 4, in combination with a physiologically acceptable carrier.

18. A vaccine comprising a polynucleotide according to claim 4, in combination with a non-specific immune response enhancer.

19. A vaccine according to claim 18, wherein the non-specific immune response enhancer is an adjuvant.

20. A vaccine according to claim 18, wherein the non-specific immune response enhancer induces a predominantly Type I response.

21. An isolated antibody, or antigen-binding fragment thereof, that specifically binds to a prostate tumor protein that comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472 or a complement of any of the foregoing polynucleotide sequences.

22. A pharmaceutical composition comprising an antibody or fragment thereof according to claim 18, in combination with a physiologically acceptable carrier.

23. A pharmaceutical composition comprising an antigen-presenting cell that expresses a polypeptide according to claim 1, in combination with a pharmaceutically acceptable carrier or excipient.

24. A pharmaceutical composition according to claim 23, wherein the antigen presenting cell is a dendritic cell or a macrophage.

25. A vaccine comprising an antigen-presenting cell that expresses a polypeptide according to claim 1, in combination with a non-specific immune response enhancer.

26. A vaccine according to claim 25, wherein the non-specific immune response enhancer is an adjuvant.

27. A vaccine according to claim 25, wherein the non-specific immune response enhancer induces a predominantly Type I response.

28. A vaccine according to claim 25, wherein the antigen-presenting cell is a dendritic cell.

29. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a polypeptide according to claim 1, and thereby inhibiting the development of a cancer in the patient.

30. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a polynucleotide according to claim 4, and thereby inhibiting the development of a cancer in the patient.

31. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of an antibody or antigen-binding fragment thereof according to claim 21, and thereby inhibiting the development of a cancer in the patient.

32. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of an antigen-presenting cell that expresses a polypeptide according to claim 1, and thereby inhibiting the development of a cancer in the patient.
33. A method according to claim 32, wherein the antigen-presenting cell is a dendritic cell.
34. A method according to any one of claims 29-32, wherein the cancer is prostate cancer.
35. A fusion protein comprising at least one polypeptide according to claim 1.
36. A fusion protein according to claim 35, wherein the fusion protein comprises an expression enhancer that increases expression of the fusion protein in a host cell transfected with a polynucleotide encoding the fusion protein.
37. A fusion protein according to claim 35, wherein the fusion protein comprises a T helper epitope that is not present within the polypeptide of claim 1.
38. A fusion protein according to claim 35, wherein the fusion protein comprises an affinity tag.
39. An isolated polynucleotide encoding a fusion protein according to claim 35.
40. A pharmaceutical composition comprising a fusion protein according to claim 32, in combination with a physiologically acceptable carrier.
41. A vaccine comprising a fusion protein according to claim 35, in combination with a non-specific immune response enhancer.
42. A vaccine according to claim 41, wherein the non-specific immune response enhancer is an adjuvant.

43. A vaccine according to claim 41, wherein the non-specific immune response enhancer induces a predominantly Type I response.
44. A pharmaceutical composition comprising a polynucleotide according to claim 40, in combination with a physiologically acceptable carrier.
45. A vaccine comprising a polynucleotide according to claim 40, in combination with a non-specific immune response enhancer.
46. A vaccine according to claim 45, wherein the non-specific immune response enhancer is an adjuvant.
47. A vaccine according to claim 45, wherein the non-specific immune response enhancer induces a predominantly Type I response.
48. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a pharmaceutical composition according to claim 40 or claim 44.
49. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a vaccine according to claim 41 or claim 45.
50. A method for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:
- (i) polynucleotides recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472; and
 - (ii) complements of the foregoing polynucleotides;
- wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the prostate tumor protein from the sample.
51. A method according to claim 50, wherein the biological sample is blood or a fraction thereof.

52. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated according to the method of claim 50.

53. A method for stimulating and/or expanding T cells specific for a prostate tumor protein, comprising contacting T cells with one or more of:

- (i) a polypeptide according to claim 1;
 - (ii) a polypeptide encoded by a polynucleotide comprising a sequence provided in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472;
 - (iii) a polynucleotide encoding a polypeptide of (i) or (ii); and/or
 - (iv) an antigen presenting cell that expresses a polypeptide of (i) or (ii);
- under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

54. An isolated T cell population, comprising T cells prepared according to the method of claim 53.

55. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population according to claim 54.

56. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

- (a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with at least one component selected from the group consisting of:
 - (i) a polypeptide according to claim 1;
 - (ii) a polypeptide encoded by a polynucleotide comprising a sequence of any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472;
 - (iii) a polynucleotide encoding a polypeptide of (i) or (ii); or
 - (iv) an antigen-presenting cell that expresses a polypeptide of (i) or (ii);

such that T cells proliferate; and

- (b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient.

57. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with at least one component selected from the group consisting of:

(i) a polypeptide according to claim 1;

(ii) a polypeptide encoded by a polynucleotide comprising a sequence of any one of SEQ ID NOs: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472;

(iii) a polynucleotide encoding a polypeptide of (i) or (ii); or

(iv) an antigen-presenting cell that expresses a polypeptide of (i) or (ii);

such that T cells proliferate;

(b) cloning at least one proliferated cell; and

(c) administering to the patient an effective amount of the cloned T cells, and thereby inhibiting the development of a cancer in the patient.

58. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with a binding agent that binds to a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472; and

(ii) complements of the foregoing polynucleotides;

(b) detecting in the sample an amount of polypeptide that binds to the binding agent; and

(c) comparing the amount of polypeptide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

59. A method according to claim 58, wherein the binding agent is an antibody.

60. A method according to claim 59, wherein the antibody is a monoclonal antibody.

61. A method according to claim 58, wherein the cancer is prostate cancer.
62. A method for monitoring the progression of a cancer in a patient, comprising the steps of:
- (a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472, or a complement of any of the foregoing polynucleotides;
 - (b) detecting in the sample an amount of polypeptide that binds to the binding agent;
 - (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and
 - (d) comparing the amount of polypeptide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.
63. A method according to claim 62, wherein the binding agent is an antibody.
64. A method according to claim 63, wherein the antibody is a monoclonal antibody.
65. A method according to claim 62, wherein the cancer is a prostate cancer.
66. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:
- (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472, or a complement of any of the foregoing polynucleotides;
 - (b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; and

(c) comparing the amount of polynucleotide that hybridizes to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

67. A method according to claim 66, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

68. A method according to claim 66, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

69. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472, or a complement of any of the foregoing polynucleotides;

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide;

(c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

(d) comparing the amount of polynucleotide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

70. A method according to claim 69, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

71. A method according to claim 69, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

72. A diagnostic kit, comprising:

(a) one or more antibodies according to claim 21; and

(b) a detection reagent comprising a reporter group.

73. A kit according to claim 72, wherein the antibodies are immobilized on a solid support.

74. A kit according to claim 73, wherein the solid support comprises nitrocellulose, latex or a plastic material.

75. A kit according to claim 72, wherein the detection reagent comprises an anti-immunoglobulin, protein G, protein A or lectin.

76. A kit according to claim 72, wherein the reporter group is selected from the group consisting of radioisotopes, fluorescent groups, luminescent groups, enzymes, biotin and dye particles.

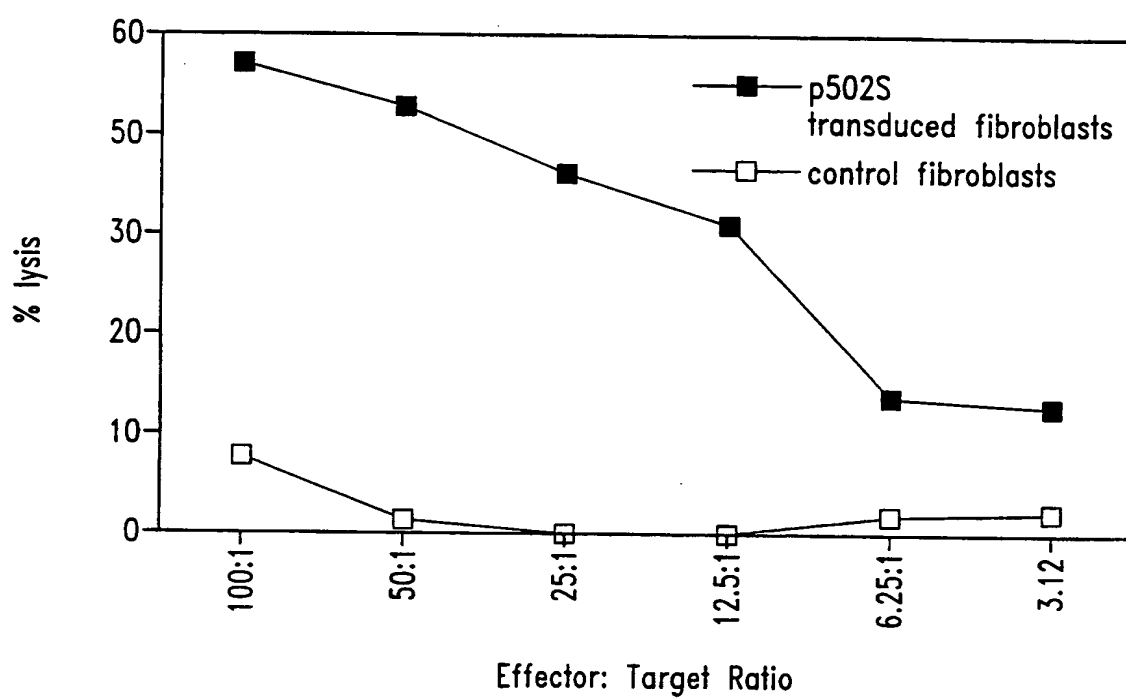
77. An oligonucleotide comprising 10 to 40 nucleotides that hybridize under moderately stringent conditions to a polynucleotide that encodes a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing polynucleotides.

78. A oligonucleotide according to claim 77, wherein the oligonucleotide comprises 10-40 nucleotides recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472.

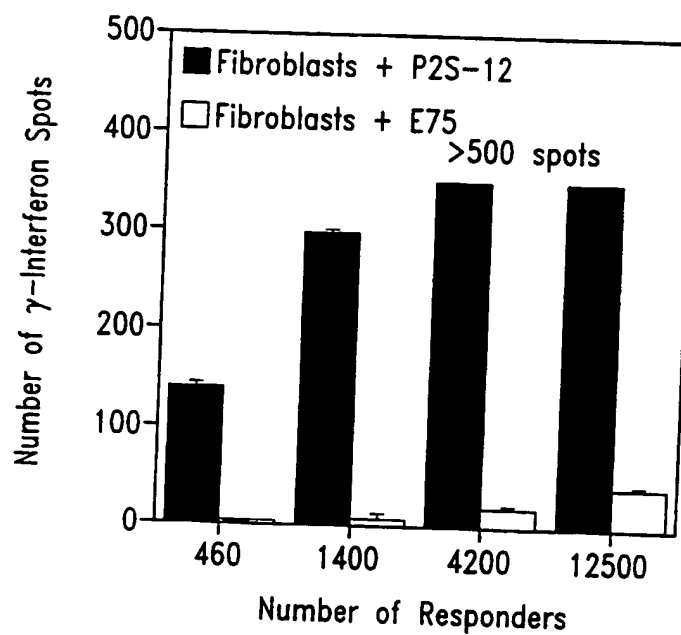
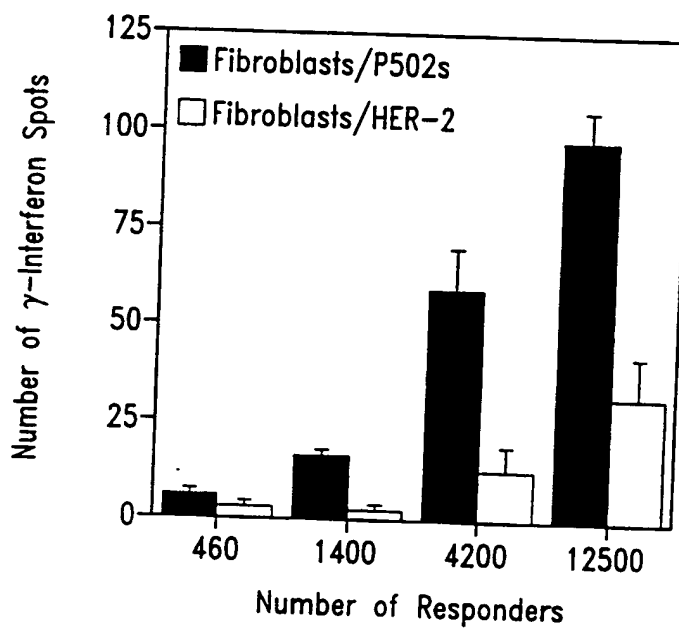
79. A diagnostic kit, comprising:

- (a) an oligonucleotide according to claim 77; and
- (b) a diagnostic reagent for use in a polymerase chain reaction or hybridization assay.

1/5

*Fig. 1*

2/5

*Fig. 2A**Fig. 2B*

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3/5

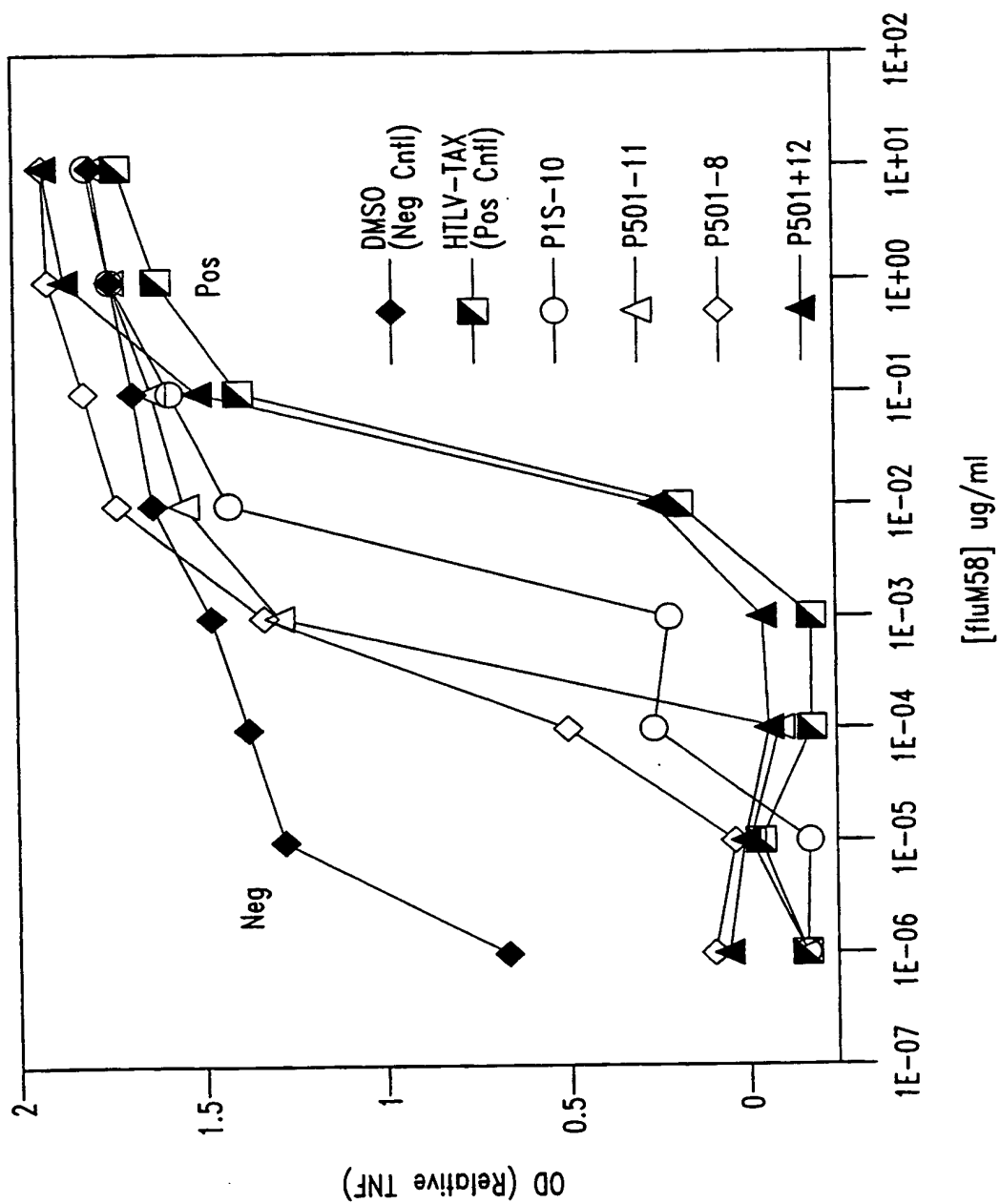
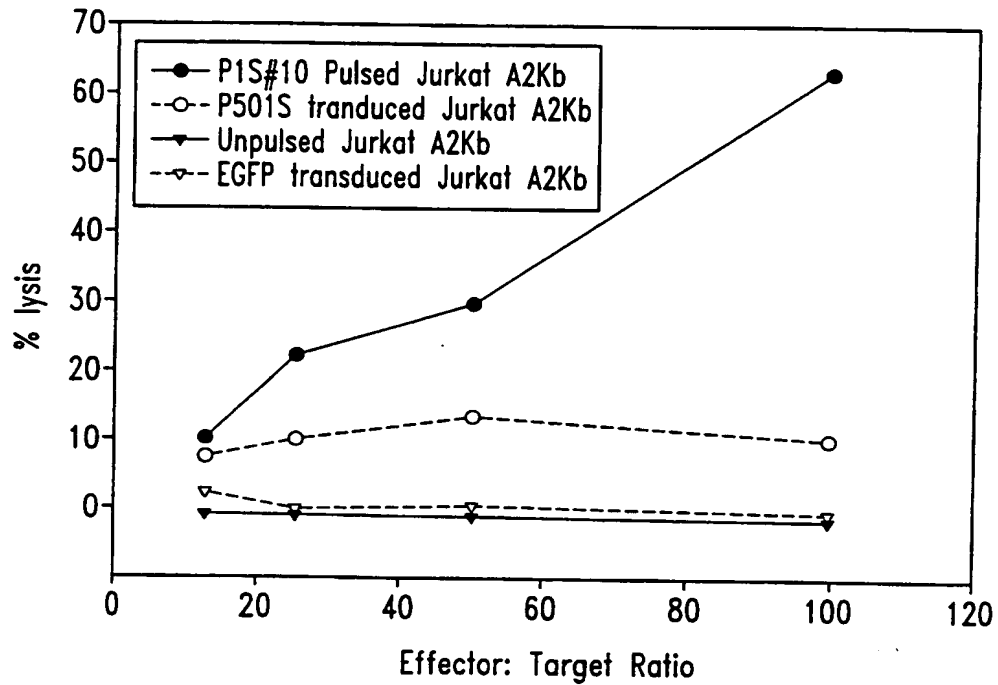
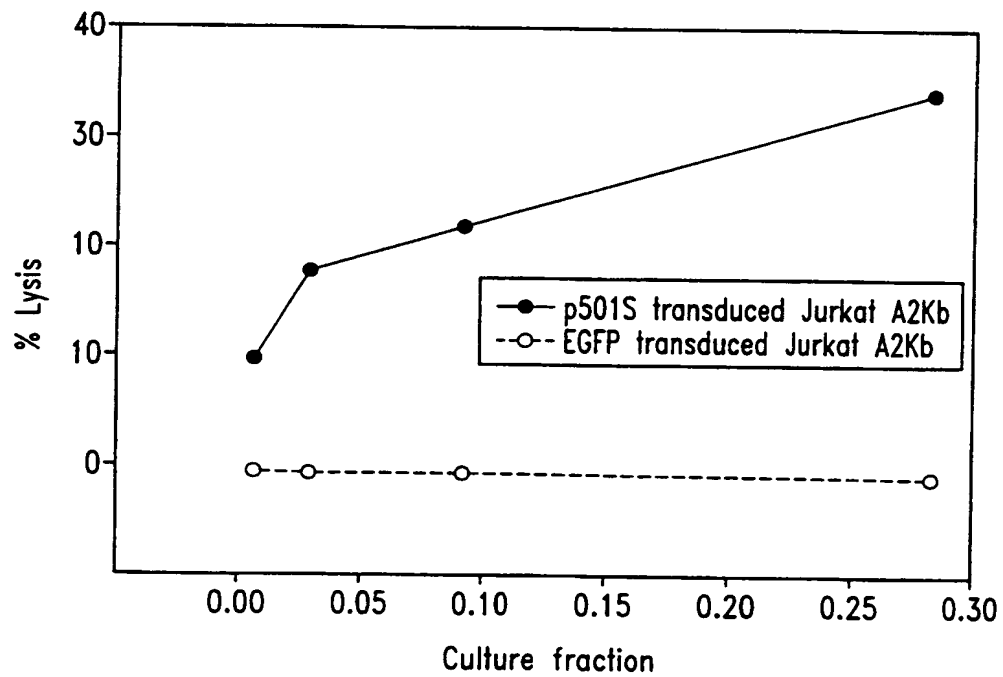


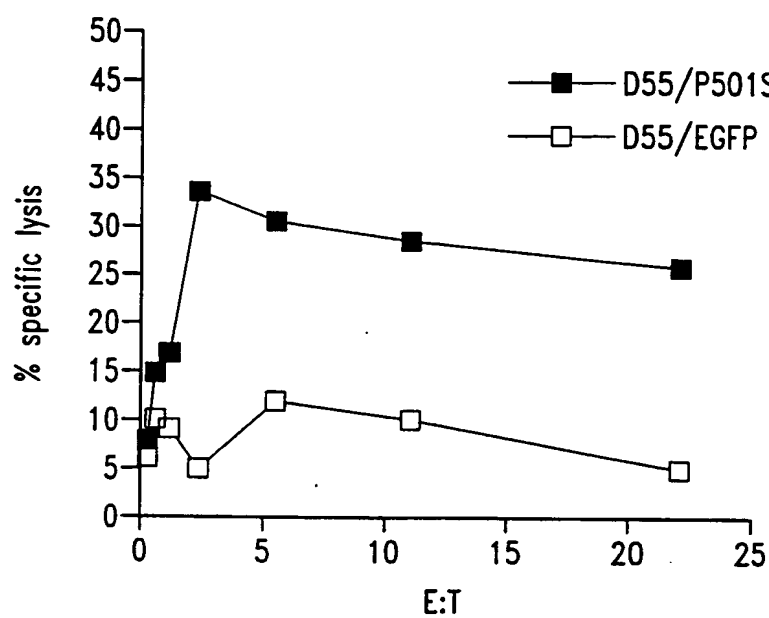
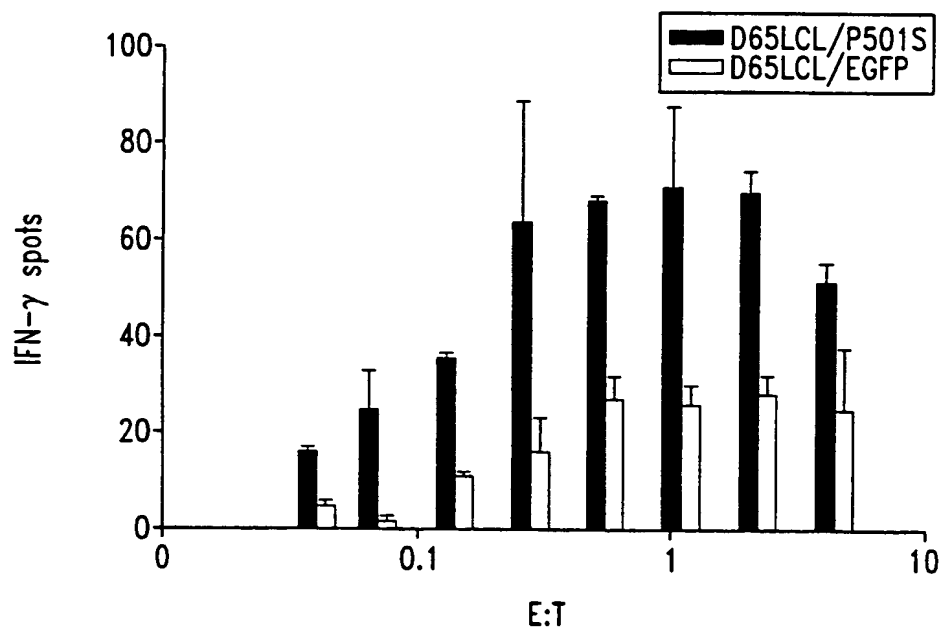
Fig. 3

4/5

*Fig. 4**Fig. 5*

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5/5

*Fig. 6**Fig. 7*

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SEQUENCE LISTING

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tcctgtcctc cactgggtgat aaacgagccc cgttccttgt tgtgatcatg atgaacaacc      120
tcctcaaaaag tcagaaccgg agtcacacag gcatctgtgc cgtcaaagat ttgacaccac      180
tctgccttcg tcttctttgc aaatacatct gcaaacttct tcttcatttc tggccaatca      240
tccatgctca tctgattggg aagttcatca gacttttagtc canntccttt gatcagcagc      300
tcgtagaact ggggttctat tgtctcaaca gccatgaatt ccccatctgc tgcctgttaa      360
gtcgtataga aagggtgctcc accatccaac atgttctgtc ctcgaggggg ggcccggtag      420
ccaattcgcc ctatantgag tcgtattacg cgcgctcact ggccgtcgtt ttacaacgtc      480
gtgactgcgc aaaccctggg cgttaccac ttaatcgcc tgcagcacat ccccttttcg      540
ccagctgggc gtaatancga aaaggcccg accgatcgcc ctccaacag ttgcgcacct      600
gaatgggnaa atgggacccc cctgttaccg cgcattnaac ccccgcnngg tttngttgtt      660
acccccacnt nnaccgctta cactttgccg gcgccttanc gcccgtctcc tttcnccttt      720
cttcctttcc tttcncncn ctttcccccg gggtttcccc cntcaaacc cna                                773

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```

<210> 4
<211> 828
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(828)
<223> n = A,T,C or G

```

```

<400> 4
cctcctgagt cctactgacc tgtgctttct ggtgtggagt ccagggctgc taggaaaagg      60
aatgggcaga cacaggtgta tgccaatgtt tctgaaatgg gtataatttc gtcctctcct      120
tcggaacact ggctgtctct gaagacttct cgctcagttt cagtgaggac acacacaaag      180
acgtgggtga ccatgttggt tgtgggggtgc agagatggga ggggtggggc ccaccctgga      240
agagtggaca gtgacacaag gtggacactc tctacagatc actgaggata agctggagcc      300
acaatgcatg aggcacacac acagcaagga tgacnctgta aacatagccc acgctgtcct      360

```

```

gngggcactg ggaagcctan atnaggccgt gagcanaaag aaggggagga tccactagtt 420
ctanagcggc cgccaccgcg gtgganctcc ancttttggt cccttttagtg agggttaatt 480
gcgcgcttgg cntaatcatg gtcatanctn tttcctgtgt gaaattgtta tccgctcaca 540
attccacaca acatacganc cggaacata aantgtaaac ctggggtgcc taatgantga 600
ctaactcaca ttaattgctg tgcgctcact gcccgccttc caatcnggaa acctgtcttg 660
ccncttgcat tnatgaatcn gccaaccccc ggggaaaagc gtttgcgctt tgggcgctct 720
tccgcttcct cncctcantta ntccctncnc tcggctcatt cggtcgncg aaaccgggtc 780
accncctcca aaggggggtat tccggtttcc ccnaatccgg gganancc 828

```

```

<210> 5
<211> 834
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(834)
<223> n = A,T,C or G

```

```

<400> 5
tttttttttt tttttactga tagatggaat ttattaagct tttcacatgt gatagcacat 60
agttttaatt gcatccaaag tactaacaaa aactctagca atcaagaatg gcagcatggt 120
attttataac aatcaacacc tgtggctttt aaaatttggt tttcataaga taattttatac 180
tgaagtaaat ctagccatgc ttttaaaaaa tgctttaggt cactccaagc ttggcagtta 240
acatttgcca taaacaataa taaaacaatc acaatttaat aaataacaaa tacaacattg 300
tagggcataa tcatatacag tataaggaaa aggtggtagt gttgagtaag cagttattag 360
aatagaatac cttggcctct atgcaaatat gtctagacac tttgattcac tcagccctga 420
cattcagttt tcaaagtagg agacagggtc tacagtatca ttttacagtt tccaacacat 480
tgaaaacaag tagaaaatga tgagtgtgatt tttattaatg cattacatcc tcaagagtta 540
tcaccaaccc ctcagttata aaaaattttc aagttatatt agtcatataa cttggtgtgc 600
ttatttttaa ttagtgctaa atggattaag tgaagacaac aatgggtccc taatgtgatt 660
gatattggtc atttttacca gcttctaaat ctnaactttc aggcttttga actggaacat 720
tgnatnacag tgttccanag ttncaaccta ctggaacatt acagtgtgct tgattcaaaa 780
tgttattttg ttaaaaatta aattttaacc tggtggaata ataatttgaa atna 834

```

```

<210> 6
<211> 818
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(818)
<223> n = A,T,C or G

```

```

<400> 6
tttttttttt tttttttttt aagaccctca tcaatagatg gagacatata gaaatagtca 60
aaccacatct acaaaatgcc agtatcaggc ggcggcttcg aagccaaagt gatgtttgga 120
tgtaaagtga aatattagtt ggcggatgaa gcagatagtg aggaaagttag agccaataat 180
gacgtgaagt ccgtggaagc ctgtggctac aaaaaatgtt gagccgtaga tgccgtcgga 240
aatggtgaag ggagactcga agtactctga ggcttgtagg agggtaaaat agagaccag 300
taaaattgta ataagcagtg cttgaattat ttggtttcgg ttgttttcta ttagactatg 360
gtgagctcag ttgattgata ctctgatgc gagtaatacg gatgtgttta ggagtgggac 420
ttctagggga tttagcgggg tgatgcctgt tgggggccag tgccctccta gttggggggt 480
aggggctagg ctggagtggg aaaaggctca gaaaaatcct gcgaagaaaa aaacttctga 540

```

ggtaataaat	aggattatcc	cgtatcgaag	gccttttttg	acagggtggtg	tgtggtggcc	600
ttggtatgtg	ctttctcgtg	ttacatcgcg	ccatcattgg	tatatgggta	gtgtgttggg	660
ttantangg	ctantatgaa	gaacttttgg	antggaatta	aatcaatngc	ttggccggaa	720
gtcattanga	nggctnaaaa	ggccctgtta	ngggtctggg	ctnggtttta	cccnacccat	780
ggaatncncc	ccccggacna	ntgnatccct	attcttaa			818

<210> 7
 <211> 817
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(817)
 <223> n = A,T,C or G

<400> 7						
tttttttttt	tttttttttt	tggctctaga	gggggtagag	ggggtgctat	agggtaaata	60
cgggccctat	ttcaaagatt	tttaggggaa	ttaattctag	gacgatgggt	atgaaactgt	120
ggtttgctcc	acagatttca	gagcattgac	cgtagtatac	ccccggtcgt	gtagcgggta	180
aagtggtttg	gttttagacgt	ccgggaattg	catctgtttt	taagcctaata	gtggggacag	240
ctcatgagtg	caagacgtct	tgtgatgtaa	ttattatacn	aatgggggct	tcaatcggga	300
gtactactcg	attgtcaacg	tcaaggagtc	gcaggtcgcc	tggttctagg	aataatgggg	360
gaagtatgta	ggaattgaag	attaatccgc	cgtagtcggg	gttctcctag	gttcaatacc	420
attggtggcc	aattgatttg	atggtaaggg	gagggatcgt	tgaactcgtc	tgttatgtaa	480
aggatncctt	ngggatggga	aggcnatnaa	ggactangga	tnaatggcgg	gcangatatt	540
tcaaacngtc	tctanttcct	gaaacgtctg	aaatgttaata	aanaattaan	tttngttatt	600
gaatnttnng	gaaaagggct	tacaggacta	gaaaccaaata	angaaaanta	atnntaangg	660
cnttatcntn	aaaggtnata	accnctccta	tnatcccacc	caatngnatt	ccccacncnn	720
acnattggat	nccccanttc	canaaanggc	cnccccccg	tgnannccnc	cttttgttcc	780
cttnantgan	ggttattcnc	ccctngcntt	atcance			817

<210> 8
 <211> 799
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(799)
 <223> n = A,T,C or G

<400> 8						
catttccggg	tttactttct	aaggaaagcc	gagcggaagc	tgctaacgtg	ggaatcgggtg	60
cataaggaga	actttctgct	ggcacgcgct	agggacaagc	gggagagcga	ctccgagcgt	120
ctgaagcgca	cgtcccagaa	ggtggacttg	gcactgaaac	agctgggaca	catccgcgag	180
tacgaacagc	gcctgaaagt	gctggagcgg	gaggtccagc	agtgtagccg	cgtcctgggg	240
tgggtggccg	angcctganc	cgctctgcct	tgctgcccc	angtgggccg	ccacccccctg	300
acctgcctgg	gtccaaacac	tgagccctgc	tggcggactt	caagganaac	ccccacangg	360
ggattttgct	cctanantaa	ggctcatctg	ggcctcggcc	ccccacctg	gttggccttg	420
tctttgangt	gagccccatg	tccatctggg	ccactgtcng	gaccaccttt	ngggagtgtt	480
ctccttacaa	ccacannatg	cccggctcct	cccggaaacc	antcccancc	tgngaaggat	540
caagnccctgn	atccactnnt	nctanaaccg	gcncncnccg	cngtggaacc	cnccttntgt	600
tccttttcnt	tnagggttaa	tnnecgcttg	gccttnccan	ngtcctncnc	nttttccnnt	660
gttnaaattg	ttangcnccc	nccnntcccn	cnnnnnnan	cccgaccenn	annntnnann	720

ncctgggggt nccnncngat tgaccenncc nccctntant tgcnttnggg ncnntgccc 780
ctttccctct nggganncg 799

<210> 9
<211> 801
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(801)
<223> n = A,T,C or G

<400> 9
acgccttgat cctcccaggc tgggactggg tctgggagga gccgggcatg ctgtgggttg 60
taangatgac actcccaaag gtggctcctga cagtggccca gatggacatg gggctcacct 120
caaggacaag gccaccaggt gcggggggccg aagcccacat gatccttact ctatgagcaa 180
aatcccctgt gggggcttct ccttgaagtc cgccancagg gctcagtctt tggaccang 240
caggtcatgg ggttgtngnc caactggggg ccncaacgca aaanggcnca gggcctcngn 300
caccatccc angacgcggc tacactnctg gacctccnc tccaccactt tcatgcgctg 360
ttcntaccg cgnatntgtc ccantgttt cngtgccnac tccancttct nggacgtgcg 420
ctacatacgc cggantenc nctcccgctt tgtccctatc cacgtncan caacaaattt 480
cncntantg caccnattcc cacntttnc agntttccnc nncgngcttc cttntaaaag 540
ggttganccc cggaaaatnc cccaaagggg gggggccngg tacccaactn cccctnata 600
gctgaantcc ccatnaccnn gnctcnatgg anccntcent tttaannacn ttctnaactt 660
gggaananc ctcgnccntn ccccnttaa tccnccttg cnangnnent ccccnntcc 720
nccnnntng gcntntnann cnaaaaaggc ccnnnancaa tctcctnnen cctcanttcg 780
ccanccctcg aaatcggecn c 801

<210> 10
<211> 789
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(789)
<223> n = A,T,C or G

<400> 10
cagtctatnt ggccagtgtg gcagctttcc ctgtggctgc cgggtgccaca tgccctgtccc 60
acagtgtggc cgtggtgaca gcttcagccg ccctcaccgg gtacaccttc tcagccctgc 120
agatcctgcc ctacacactg gcctccctct accaccggga gaagcagggtg ttcctgccc 180
aataccgagg ggacactgga ggtgctagca gtgaggacag cctgatgacc agcttcctgc 240
caggccctaa gcctggagct ccctcccta atggacacgt ggggtgctgga ggcagtggcc 300
tgctcccacc tccaccgcg ctctgcgggg cctctgcctg tgatgtctcc gtacgtgtgg 360
tggtgggtga gcccaccgan gccagggtgg ttccgggccc gggcatctgc ctggacctcg 420
ccatccttga tagtgcttcc tgctgtccca ngtggcccca tccctgttta tgggtccat 480
tgtccagctc agccagtctg tcaactgccta tatggtgtct gccgcaggcc tgggtctggg 540
cccatctact ttgctacaca ggtantattt gacaagaacg anttggccaa atactcagc 600
ttaaaaaatt ccagcaacat tgggggtgga aggcctgcct cactgggtcc aactcccg 660
tcctgttaac cccatggggc tgccggcttg gccgccaatt tctgttgctg ccaaantnat 720
gtggctctct gctgccacct gttgctggct gaagtgcnta cngcncanct nggggggtng 780
ggngttccc 799

<210> 11
 <211> 772
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(772)
 <223> n = A,T,C or G

<400> 11

cccaccctac	ccaaatatta	gacaccaaca	cagaaaagct	agcaatggat	tcccttctac	60
tttggttaaat	aaataagtta	aatattttaa	tgcctgtgtc	tctgtgatgg	caacagaagg	120
accaacaggc	cacatcctga	taaaaggtaa	gaggggggtg	gatcagcaaa	aagacagtgc	180
tgtgggctga	ggggacctgg	ttcttgtgtg	ttgcccctca	ggactcttcc	cctacaaata	240
actttcatat	gttcaaattcc	catggaggag	tgtttcatcc	tagaaactcc	catgcaagag	300
ctacattaaa	cgaagctgca	ggttaagggg	cttanagatg	ggaaaccagg	tgactgagtt	360
tattcagctc	ccaaaaaccc	ttctctaggt	gtgtctcaac	taggaggcta	gctgttaacc	420
ctgagcctgg	gtaatccacc	tgcagagtcc	ccgcattcca	gtgcatggaa	cccttctggc	480
ctccctgtat	aagtccagac	tgaaaccccc	ttggaaggnc	tccagtcagg	cagccctana	540
aactggggaa	aaaagaaaaa	gacgccccan	ccccagctg	tgcantacg	cacctcaaca	600
gcacaggggtg	gcagcaaaaa	aaccacttta	ctttggcaca	aacaaaaact	ngggggggca	660
accccgccac	cccnangggg	gttaacagga	ancngggnaa	cntggaaccc	aattnaggca	720
ggccccnccac	ccnnaatntt	gctgggaaat	ttttcctccc	ctaaattntt	tc	772

<210> 12
 <211> 751
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(751)
 <223> n = A,T,C or G

<400> 12

gccccaatc	cagctgccac	accacccacg	gtgactgcat	tagttcggat	gtcatacaaa	60
agctgattga	agcaaccctc	tacttttttg	tcgtgagcct	tttgcttggg	gcaggtttca	120
ttggctgtgt	tggtgacgtt	gtcattgcaa	cagaatgggg	gaaaggcact	gttctctttg	180
aagtanggtg	agtcctcaaa	atccgtatag	ttggtgaagc	cacagcactt	gagccctttc	240
atgggtgggtg	tccacacttg	agtgaagtct	tcctgggaac	cataatcttt	cttgatggca	300
ggcactacca	gcaacgtcag	ggaagtgtc	agccattgtg	gtgtacacca	aggcgaccac	360
agcagctgcn	acctcagcaa	tgaagatgan	gaggangatg	aagaagaacg	tcncgagggc	420
acacttgctc	tcagtcttan	caccatanca	gcccntgaaa	accaananca	aagaccacna	480
cnccggctgc	gatgaagaaa	tnaccccneg	ttgacaaaact	tgcatggcac	tggganccac	540
agtggcccn	aaaatcttca	aaaaggatgc	cccactnatt	gaccccccaa	atgcccactg	600
ccaacagggg	ctgccccacn	cncnnaacga	tganccnatt	gnacaagatc	tnentggctc	660
tnatnaacnt	gaaccctgcn	tngtggctcc	tgttcaggnc	cnnggcctga	cttctnaann	720
aangaactcn	gaagncccca	cngganann	g			751

<210> 13
 <211> 729
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(729)
 <223> n = A,T,C or G

<400> 13

gagccaggcg	tcctctgcc	tgccactca	gtggcaacac	ccgggagctg	ttttgtcctt	60
tgtggancct	cagcagtncc	ctctttcaga	actcantgcc	aaganccctg	aacaggagcc	120
accatgcagt	gcttcagctt	cattaagacc	atgatgatcc	tcttcaattt	gctcatcttt	180
ctgtgtggtg	cagccctgtt	ggcagtgggc	atctgggtgt	caatcgatgg	ggcatccttt	240
ctgaagatct	tcggggccact	gtcgtccagt	gccatgcagt	ttgtcaacgt	gggctacttc	300
ctcatcgag	ccggcggtgt	ggtcttagct	ctaggtttcc	tgggctgcta	tgggtgctaag	360
actgagagca	agtgtgccct	cgtgacgttc	ttcttcatcc	tcctcctcat	cttcattgct	420
gaggttgcaa	tgtgtgggtc	gccttggtgt	acaccacaat	ggctgagcac	ttcctgacgt	480
tgtgtgtaat	gcctgccatc	aanaaaagat	tatgggttcc	caggaanact	tcactcaagt	540
gttggaacac	caccatgaaa	gggctcaagt	gctgtggctt	cnnccaacta	tacggatttt	600
gaagantcac	ctacttcaaa	gaaaaanagt	cctttccccc	atttctgttg	caattgacaa	660
acgtccccaa	cacagccaat	tgaaaacctg	cacccaaccc	aaanggggtcc	ccaaccanaa	720
attnaaggg						729

<210> 14
 <211> 816
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(816)
 <223> n = A,T,C or G

<400> 14

tgtcttctct	caaagttggt	cttgttgcca	taacaaccac	cataggtaaa	gcgggagcag	60
tgctcgctga	aggggttgta	gtaccagcgc	gggatgctct	ccttgacagag	tcctgtgtct	120
ggcaggtcca	cgcagtggcc	tttgtcactg	gggaaatgga	tgcgctggag	ctcgtcaaag	180
ccactcgtgt	atttttcaca	ggcagcctcg	tccgacgcgt	cggggcagtt	gggggtgtct	240
tcacactcca	ggaaactgtc	natgcagcag	ccattgctgc	agcggaaactg	ggtgggctga	300
cangtgccag	agcacactgg	atggcgctct	tccatgmnan	gggcccctgng	ggaaagtccc	360
tganccccc	anctgcctct	caaangcccc	accttgacac	ccccgacagg	ctagaatgga	420
atcttcttcc	cgaaggttag	ttnttcttgt	tgccc aancc	anccccntaa	acaaactctt	480
gcanatctgc	tccngggggg	tcntantacc	ancgtgggaa	aagaacccca	ggcngcgaac	540
caancttgtt	tggatncgaa	gcnataatct	ncntttctgc	ttggtggaca	gcaccantna	600
ctgtnnanct	ttagnccntg	gtcctcntgg	gttgnncttg	aacctaatcn	ccnntcaact	660
gggacaaggt	aantngccnt	ccttttnaatt	cccnancntn	ccccctgggt	tgggggttttn	720
cncntccta	ccccagaaan	nccgtgttcc	cccccaacta	ggggccnaaa	ccnnttnttc	780
cacaacctn	ccccacccac	gggttcngnt	ggttng			816

<210> 15
 <211> 783
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(783)
 <223> n = A,T,C or G

<400> 15

ccaaggcctg	ggcaggcata	nacttgaagg	tacaacccca	ggaacccctg	gtgctgaagg	60
atgtggaaaa	cacagattgg	cgccactgc	gggtgacac	ggatgtcagg	gtagagagga	120
aagacccaaa	ccaggtggaa	ctgtggggac	tcaaggaang	cacctacctg	ttccagctga	180
cagtgactag	ctcagaccac	ccagaggaca	cggccaacgt	cacagtcact	gtgctgtcca	240
ccaagcagac	agaagactac	tgcctcgcac	ccaacaangt	gggtcgctgc	cggggctctt	300
tcccacgctg	gtactatgac	cccacggagc	agatctgcaa	gagtttcgtt	tatggaggct	360
gcttgggcaa	caagaacaac	taccttcggg	aagaagagtg	cattctancc	tgtcnggggtg	420
tgcaagggtg	gcctttgana	ngcanctctg	gggctcangc	gactttcccc	caggggccctt	480
ccatggaaaag	gcgccatcca	ntgttctctg	gcacctgtca	gcccacccag	ttccgctgca	540
ncaatggctg	ctgcacnac	antttcctng	aattgtgaca	acacccccc	ntgcccccaa	600
ccctcccaac	aaagcttccc	tgttnaaaaa	tacnccantt	ggcttttnac	aaacncccg	660
cnctccntt	ttcccnntn	aacaaagggc	nctngcnttt	gaactgccc	aaccnnggaa	720
tctnccnngg	aaaaantncc	ccccctggtt	cctnnaancc	cctccnca	antncccc	780
ccc						783

<210> 16

<211> 801

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(801)

<223> n = A,T,C or G

<400> 16

gccccaatc	cagctgccac	accacccacg	gtgactgcat	tagttcggat	gtcatacaaa	60
agctgattga	agcaaccctc	tacttttttg	tcgtgagcct	tttgcttggg	gcaggtttca	120
ttggctgtgt	tggtgacgtt	gtcattgcaa	cagaatgggg	gaaaggcact	gttctctttg	180
aagtaggggtg	agtcctcaaa	atccgtatag	ttgggtgaagc	cacagcactt	gagccctttc	240
atgggtgggtg	tccacacttg	agtgaagtct	tcctgggaac	cataatcttt	cttgatggca	300
ggcactacca	gcaacgtcag	gaagtgtctc	gccattgtgg	tgtacaccaa	ggcgaccaca	360
gcagctgcaa	cctcagcaat	gaagatgagg	aggaggatga	agaagaacgt	cncgagggca	420
cacttgctct	ccgtcttagc	accatagcag	cccangaaac	caagagcaaa	gaccacaacg	480
ccngctgcga	atgaaagaaa	ntacccacgt	tgacaaactg	catggccact	ggacgacagt	540
tgccccgaan	atcttcagaa	aagggatgcc	ccatcgattg	aacacccana	tgcccactgc	600
cnacagggct	gcncncncn	gaaagaatga	gccattgaag	aaggatcnc	ntggtcttaa	660
tgaactgaaa	ccntgcatgg	tggccccctg	tcagggtctt	tggcagtga	ttctganaaa	720
aaggaacngc	ntnagcccc	ccaaangana	aaacaccccc	gggtgttgcc	ctgaattggc	780
ggccaaggan	ccctgccccn	g				801

<210> 17

<211> 740

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(740)

<223> n = A,T,C or G

<400> 17

gtgagagcca	ggcgctccctc	tgccctgccca	ctcagtgcca	acacccggga	gctgttttgt	60
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cctttgtgga	gcctcagcag	ttccctcttt	cagaactcac	tgccaagagc	cctgaacagg	120
agccaccatg	cagtgcctca	gcttcattaa	gaccatgatg	atcctcttca	atttgtcat	180
ctttctgtgt	ggtgcagccc	tggtggcagt	gggcatctgg	gtgtcaatcg	atggggcatc	240
ctttctgaag	atcttcgggc	cactgtcgtc	cagtgccatg	cagtttgtca	acgtgggcta	300
cttcctcatc	gcagccggcg	ttgtggtctt	tgctcttggg	ttcctgggct	gctatgggtg	360
taagacggag	agcaagtgtg	ccctcgtgac	gttcttcttc	atcctcctcc	tcattctcat	420
tgctgaagt	gcagctgctg	tggtcgctt	ggtgtacacc	acaatggctg	aaccattcct	480
gacgttgctg	gtantgcctg	ccatcaanaa	agattatggg	ttcccaggaa	aaattcactc	540
aantntggaa	caccnccatg	aaaagggctc	caatttctgn	tggttcccc	aactataccg	600
gaattttgaa	agantcnccc	tacttccaaa	aaaaaanant	tgcttttnc	ccntttctgt	660
tgcaatgaaa	acntcccaan	acngccaatn	aaaacctgcc	cnnncaaaaa	ggntcncaaa	720
caaaaaaant	nnaagggttn					740

<210> 18
 <211> 802
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (802)
 <223> n = A,T,C or G

<400> 18		
ccgctgggtg	cgctgggtcca gngnagccac gaagcacgtc agcatacaca gcctcaatca 60	
caaggtcttc	cagctgccgc acattacgca gggcaagagc ctccagcaac actgcatatg 120	
ggatacactt	tacttttagca gccagggtga caactgagag gtgtcgaagc ttattcttct 180	
gagcctctgt	tagtggagga agattccggg cttcagctaa gtagtcagcg tatgtcccat 240	
aagcaaacac	tgtgagcagc cggaaggtag aggcaaagtc actctcagcc agctctctaa 300	
cattgggcat	gtccagcagt tctccaaaca cgtagacacc agnggcctcc agcacctgat 360	
ggatgagtgt	ggccagcgct gcccccttgg ccgacttggc taggagcaga aattgctcct 420	
ggttctgccc	tgtcaccttc acttccgcac tcatcactgc actgagtgtg ggggacttgg 480	
gctcaggatg	tccagagacg tggttccgcc ccctcnctta atgacaccgn ccanncaacc 540	
gtcggctccc	ggcgantgng ttcgtcgtnc ctgggtcagg gtctgctggc cnetacttgc 600	
aancttcgtc	nggcccattg aattcaccnc accggaactn gtangatcca ctntttctat 660	
aaccggnccg	caccgcnntt ggaactccac tcttnttnc tttacttgag ggtaaggtc 720	
acccttnncc	ttaccttggg ccaaaccntn ccntgtgtcg anantngtnaa tcnggncna 780	
tnccancnc	atangaagcc ng	802

<210> 19
 <211> 731
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (731)
 <223> n = A,T,C or G

<400> 19	
cnaagcttcc	aggtnacggg ccgcnaancc tgaccnagg tancanaang cagnncggg 60
gagcccaccg	tcacgngng gngtctttat nggagggggc ggagccacat cnetggacnt 120
cntgaccca	actccccnc ncnantgca gtgatgagt cagaactgaa ggtnacgtg 180
caggaaccaa	gancaaannc tgctccntc caagtcggcn nagggggcg ggctggccac 240
gcncatccnt	cnagtgtgn aaagcccn cctgtctact tgtttggaga acngcnnga 300

catgcccagn	gttanataac	nggcngagag	tnantttgcc	tctcccttcc	ggctgcgcan	360
cgngtntgct	tagnggacat	aacctgacta	cttaactgaa	cccnngaate	tnccnccct	420
ccactaagct	cagaacaaaa	aacttcgaca	ccactcantt	gtcacctgnc	tgctcaagta	480
aagtgtaccc	catncccaat	gtntgctnga	ngctctgncc	tgcntttangt	tcggtcctgg	540
gaagacctat	caattnaagc	tatgtttctg	actgcctctt	gctccctgna	acaancnacc	600
cnncnntcca	agggggggnc	ggcccccaat	ccccccaacc	ntnaattnan	tttancccn	660
ccccngggc	cggcctttta	cnancntcnn	nnacngggna	aaaccnnngc	tttncccaac	720
nnaatccncc	t					731

<210> 20

<211> 754

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(754)

<223> n = A,T,C or G

<400> 20

tttttttttt	tttttttttt	taaaaacccc	ctccattnaa	tgnaaacttc	cgaaattgtc	60
caaccccttc	ntccaaatnn	ccntttccgg	gnnggggttc	caaacccean	ttanntttgg	120
annttaaatt	aaatnttnt	tgngngnnna	anccnaatgt	nangaaagtt	naaccanta	180
tnancttnaa	tnccctggaaa	ccngtngntt	caaaaaatnt	ttaaccctta	antccctccg	240
aaatngttna	nggaaaaccc	aantttctnt	aaggttgttt	gaaggntnaa	tnaaaanccc	300
nnccaattgt	ttttngccac	gcctgaatta	attggnttcc	gntgttttcc	nttaaaanaa	360
ggnnancccc	ggttantnaa	tccccccnnc	cccaattata	ccganttttt	ttngaattgg	420
gancccnccg	gaattaacgg	ggnnnnntccc	tnttgggggg	cnggnncccc	ccccntcggg	480
ggttngggnc	aggnccnaat	tgtttaaggg	tccgaaaaat	ccctccnaga	aaaaaanctc	540
ccaggntgag	nntnggggtt	nccccccccc	cangggccct	ctcgnaagtt	tggggtttgg	600
ggggcctggg	attttntttc	ccctnttncc	tccccccccc	ccnggganag	aggttngngt	660
tttgntcnnc	ggccccnccn	aaganccttn	ccganttnan	ttaaatccnt	gcctnggcga	720
agtcctntgn	agggntaaan	ggccccctnn	cggg			754

<210> 21

<211> 755

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(755)

<223> n = A,T,C or G

<400> 21

atcancat	gaccccaaac	nnngggaccnc	tcancgggnc	nnncnaccnc	cggecnatca	60
ngtnagnnc	actncnnttn	natcacnccc	cncnactac	gcccncnanc	cnacgcncta	120
nncanattnc	actganngcg	cganngngan	ngagaaaact	nataccanag	ncaccanacn	180
ccagctgtcc	nanaangcct	nnnatacnng	nnnatccaat	ntgnancctc	cnaagtattn	240
nnnncanatt	gattttcctn	anccgattac	ccntncccc	tanccctcc	cccccaacna	300
cgaaggcnct	ggncnnaagg	nnngcgncc	ccgctagntc	cccnnaagt	cnncncccta	360
aactcancn	nattacncgc	ttcntgagta	tcactccccg	aatctcacc	tactcaactc	420
aaaaanattc	gatacaaaat	aatncaagcc	tgnttatnac	actntgactg	ggctctctatt	480
ttagnngtcc	ntnaancntc	ctaatacttc	cagtctncct	tcnccaattt	ccnaanggct	540
ctttcngaca	gcattntttg	gttcccnntt	gggttcttan	ngaattgcc	ttcntngaac	600

gggctcntct	tttccttcgg	ttancctggn	ttcnncggc	cagttattat	ttcccntttt	660
aaattcntnc	cntttanttt	tggcnttcna	aacccccggc	cttgaaaacg	gccccctggg	720
aaaagggtgt	tttganaaaa	tttttgtttt	gttcc			755

<210> 22
 <211> 849
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(849)
 <223> n = A,T,C or G

<400> 22						
tttttttttt	tttttangtg	tngtcgtgca	ggtagaggct	tactacaant	gtgaanacgt	60
acgctnngan	taangcgacc	cgantttctag	gannnccect	aaaatcanac	tgtgaagatn	120
atcctgnnna	cggaanggtc	accggnngat	nntgctaggg	tgncnctcc	cannncnttn	180
cataactcng	nggccctgcc	caccaccttc	ggcgggccng	ngnccgggcc	cgggtcattn	240
gnnttaaccn	cactnngcna	ncggtttccn	ncccnncng	accnnggcga	tccgggggtnc	300
tctgtcttcc	cctgnagncn	anaaantggg	ccnccgnccc	ctttaccct	nnacaagcca	360
cngccntcta	ncncngccc	cccctccant	nngggggact	gccnanngt	ccgttncctng	420
nnaccccnnn	gggtncctcg	gttgtcgant	cnaccgnang	ccanggatc	cnaaggaagg	480
tgcgttnttg	gcccctaccc	ttcgctncgg	nncacccttc	ccgacnanga	nccgctcccc	540
cncnncgnng	cctcncctcg	caacacccgc	netcntcngt	ncggnnnccc	ccccaccgc	600
ncctcncnc	ngnecgnanc	ctcncncnc	gtctcannca	ccaccccgcc	ccgccaggcc	660
ntcanccacn	ggngacnng	nagcncntc	gcncgcgcgn	gcgnccct	cgcncngaa	720
ctnctcngg	ccantnncg	tcaanccnna	cnaaacgccg	ctgcgcggcc	cgnagcgncc	780
ncctcncga	gtcctcccg	cttcnacc	angnnttcn	cgaggacacn	nnaccccgcc	840
nncangcgg						849

<210> 23
 <211> 872
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(872)
 <223> n = A,T,C or G

<400> 23						
gcgcaaaacta	tacttcgctc	gnactcgtgc	gcctcgctnc	tcttttcctc	cgcaaccatg	60
tctgacnanc	ccgattnggc	ngatatcnan	aagntcganc	agtccaaact	gantaacaca	120
cacacnncan	aganaaatcc	netgccttcc	anagtanacn	attgaacnng	agaaccangc	180
nggcgaatcg	taatnaggcg	tgcgcgcgca	atntgtcncc	gtttattntn	ccagcncnc	240
ctnccnacc	tacntcttcn	nagctgtcnn	acccctngtn	cgnaccccc	naggtcggga	300
tgcgggtttn	nntgaccng	cnccccctcc	ccccctccat	nacganccnc	ccgcaccacc	360
nanngcncgc	nccccgnnet	cttcgcnc	ctgtcctntn	cccctgtngc	ctggcncngn	420
accgcattga	ccctcgccnn	ctncnngaaa	ncgnanacgt	ccgggttggn	annancgctg	480
tgggnnngcg	tctgcncgc	gttccttcn	nenncttcca	ccatcttct	tacnggggtct	540
ccnccgctc	tcnnncacnc	cctgggaagc	tnctctntgc	cccccttnac	tccccccctt	600
cgnccgtgncc	cgnccccacc	ntcatttnca	nacgntcttc	acaannncct	ggntnnctcc	660
cnancngncn	gtcanccnag	ggaaggngg	ggnnccnttg	nttgacgttg	ngngangtc	720
cgaanantcc	tcnccntcan	cnctaccct	cgggcgnnet	ctengttnc	aacttancaa	780

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ntctcccccg ngngcncttc tcagcctenc ccnccccnct ctctgcantg tntctctgctc      840
tnaccnntac gantnttcgn cncctcttt cc                                         872

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<210> 24

<211> 815

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(815)

<223> n = A,T,C or G

<400> 24

```

gcatgcaagc ttgagtattc tatagngtca cctaaatanc ttggcntaat catggtcnta      60
nctgncttcc tgtgtcaaatt gtatacnaaa tanatatgaa tctnatntga caaganngta      120
tcntncatta gtaacaantg tnntgtccat cctgtcngan canattccca tnnattncgn      180
cgcattcncn gcncantatn taatngggaa ntcnnntnnn ncaccnncat ctatcntncc      240
gcnccttgac tggagagat ggatnanttc tnntntgacc nacatgttca tcttggattn      300
aanancccc cgcnngccac cggttngnng cnagccnntc ccaagacctc ctgtggaggt      360
aacctgcgtc aganncatca aacntgggaa acccgcnntc angtnnaagt ngnnncanan      420
gateccgtcc aggnntnacc atcccttcnc agcgccccct ttngtgcctt anagnnagc      480
gtgtccnanc cncctcaacat ganacgcgcc agnccanccg caattnggca caatgtcgn      540
gaacccccct ggggggantna tncaaanccc caggattgtc cncncangaa atcccncanc      600
ccnccctac ccncttttg gacngtgacc aantcccga gtncagatcc ggcngnctc      660
ccccaccggt nnccttgagg ggggtgaanct cngnntcanc cngncgaggn ntcgnaagga      720
accggncctn ggncgaanng ancnnctnga agngccnct cgtataacce cccctcncca      780
nccnacngnt agntcccccc cngggtnccg aangg                                         815

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<210> 25

<211> 775

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(775)

<223> n = A,T,C or G

<400> 25

```

ccgagatgtc tcgctccgtg gccttagctg tgctcgcgt actctctctt tctggcctgg      60
aggctatcca gcgtactcca aagattcagg ttactcacg tcatccagca gagaatggaa      120
agtcaaattt cctgaattgc tatgtgtctg ggtttcaccc atccgacatt gaanttgcact      180
tactgaagaa tgganagaga attgaaaaag tggagcattc agacttgtct ttcagcaagg      240
actggtcttt ctatctcntg tactacactg aattcacccc cactgaaaaa gatgagtatg      300
cctgccgtgt gaaccatgtg actttgtcac agcccaagat agttaagtgg gatcgagaca      360
tgtaagcagn cnnatggaa gtttgaagat gccgcatttg gattggatga attccaaatt      420
ctgcttgctt gcnttttaatt antgatatgc ntataacccc taccctttat gnccccaaat      480
tgtaggggtt acatnantgt tcnctnngga catgatcttc ctttataant ccnctnttcg      540
aattgcccgt cncnngttn ngaatgtttc cnaaccacg gttggctccc ccaggtcncc      600
tcttacggaa gggcctgggc cnccttncaa gggtggggga accnaaaatt tcnctnttgc      660
ccncccncca cnntcttgng nncncanttt ggaacccttc cnattccctt tggcctcnna      720
nccttnncta anaaaacttn aaancgtngc naaanttttn acttcccccc ttacc                                         775

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<210> 26

<211> 820
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(820)
 <223> n = A,T,C or G

<400> 26
 anattantac agtghtaatct tttcccagag gtgtgtanag ggaacggggc ctagaggcat 60
 cccanagata ncttatanca acagtgtctt gaccaagagc tgctggggcac atttcctgca 120
 gaaaagggtg cggtcccat cactcctcct ctcccatagc catcccagag ggggtgagtag 180
 ccatcangcc ttcggtggga gggagtcang gaaacaacan accacagagc anacagacca 240
 ntgatgacca tgggcgggag cgagcctctt ccctgnaccg ggggtggcana nganagccta 300
 nctgaggggt cacactataa acgttaacga ccnagatnan cacctgcttc aagtgcaccc 360
 ttcctacctg acnaccagng accnnnaact gcngcctggg gacagcncctg ggancagcta 420
 acnnagcact cacctgcccc cccatggccg tncgcntccc tggctcctgnc aagggaagct 480
 ccctgttgga attncgggga naccaaggga nccccctcct ccancctgtga aggaaaaann 540
 gatggaattt tnccttccg gccnntcccc tcttccttta cagccccct nntactentc 600
 tccctctntt ntcctgnenc acttttnacc ccnnnatttc ccttnattga tcggannctn 660
 ganattccac tnnccgctnc cntcnatcng naanacnaaa nactntctna cccnggggat 720
 gggnnccctg ntcactctct ctttttctct accncnntt ctttgctct ccttngatca
 780tccaacntc gntggcentn cccccccnnn tcccttnccc
 820

<210> 27
 <211> 818
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(818)
 <223> n = A,T,C or G

<400> 27
 tctgggtgat ggcctcttcc tcctcagggg cctctgactg ctctggggcca aagaatctct 60
 tgtttcttct cagagcccca ggcagcgggtg attcagccct gcccaacctg attctgatga 120
 ctgcggatgc tgtgacggac ccaaggggca aatagggtcc cagggtccag ggaggggagc 180
 ctgctgagca cttccgcccc tcacctgcc cagccccctgc catgagctct gggctgggtc 240
 tccgcctcca gggttctgct cttccangca ngccancaag tggcgctggg ccacactggc 300
 ttcttctgct cccntccctg gctctgante tctgtcttcc tgctctgtgc angcnccttg 360
 gatctcagtt tccctcctc anngaactct gtttctgann tcttcantta actntgantt 420
 tatnaccnan tggnetgtnc tgtcnnactt taatgggcn gaccggctaa tccctccctc 480
 nctcccttcc antcnnna accngcttnc cntentctcc ccntancccg ccngggaanc 540
 ctcccttgcc ctnaccangg gccnnnaccg ccctnnctn ggggggcnng gttnctncnc 600
 ctgntnnccc cnetcncnt tncctcgtcc cnnncnncn nngcannttc ncngtcccn 660
 tnnctcttcn ngntcgnaa ngntcncntn tnnnnngnnc ngntntnctn tccctctcnc 720
 cnnntgnang tnntnnnc ncngnnccc nnnnnnnnn nggnntnnn tctncncngc 780
 cccnncccc ngnattaagg cctcncntct ccggcnc 818

<210> 28
 <211> 731
 <212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (731)

<223> n = A,T,C or G

<400> 28

aggaagggcg	gagggatatt	gtangggatt	gagggatagg	agnataangg	gggaggtgtg	60
tcccaacatg	anggtgnngt	tctcttttga	angaggggtg	ngtttttann	ccnggtgggt	120
gattnaaccc	cattgtatgg	agnnaaagg	tttnagggat	ttttcggtc	ttatcagtat	180
ntanattcct	gtnaatcgga	aaatnatntt	tcnncnggaa	aatnttgctc	ccatccgnaa	240
attnctcccg	ggtagtgc	nttnggggn	cngccangtt	tcccaggctg	ctanaatcgt	300
actaaagntt	naagtggan	tncaaataa	aacctnnac	agagnatccn	taccgcactg	360
tnnttncct	tcgcccctng	actctgcng	agcccaatac	ccnngngnat	gtcncccngn	420
nnngcgnnc	tgaaannnn	tcngggctnn	gancatcang	gggtttcgca	tcaaaagcnn	480
cgtttcncat	naaggcactt	tngcctcatc	caaccnctng	ccctcnncca	tttngccgtc	540
nggttcncct	acgctnnntg	cncctnnntn	ganattttnc	cgcctnggg	naancctcct	600
gnaatgggta	gggncttntc	tttnaccnn	gnggtntact	aatcnnctnc	acgcntnctt	660
tctcnacccc	ccccctttt	caatcccanc	ggcnaatggg	gtctcccnn	cgangggggg	720
nnnccccann	c					731

<210> 29

<211> 822

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (822)

<223> n = A,T,C or G

<400> 29

actagtccag	tgtggtggaa	ttccattgtg	ttggggncnc	ttctatgant	antnttagat	60
cgctcanacc	tcacancctc	ccnacnangc	ctataangaa	nannaataga	nctgtncnnt	120
atntntacnc	tcatanncct	cnnnaccac	tccctcttaa	cccntactgt	gcctatngcn	180
tnnctantct	ntgccgectn	cnanccacn	gtgggcecnac	cncnngnatt	ctcnatctcc	240
tcnccatntn	gcctananta	ngtncatacc	ctataacctac	nccaatgcta	nnnctaancn	300
tccatnantt	annntaacta	ccactgaent	ngactttcnc	atnanctcct	aatttgaatc	360
tactctgact	cccacngcct	annnattagc	ancntcccc	nacnatntct	caaccaaate	420
ntcaacaacc	tatctanctg	ttcnccaacc	nttncctccg	atccccnnac	aacccccctc	480
ccaaataccc	nccacctgac	ncctaaccn	caccatccc	gcaagccnan	ggncatttan	540
ccactggaat	cacnatngga	naaaaaaaaa	ccnaactctc	tancncnnat	ctccctaana	600
aatnctcctn	naatttactn	ncantnccat	caanccacn	tgaaacnnaa	cccctgtttt	660
tanatccctt	ctttcgaaaa	ccnacccttt	annncccaac	ctttngggcc	ccccnctnc	720
ccnaatgaag	gncncccaat	cnangaaacg	ncntgaaaa	ancnaggcna	anannntccg	780
canatcctat	cccttanttn	ggggnccctt	nccnggggcc	cc		822

<210> 30

<211> 787

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(787)

<223> n = A,T,C or G

<400> 30

```

cggccgcctg ctctggcaca tgcctcctga atggcatcaa aagtgatgga ctgcccattg      60
ctagagaaga ccttctctcc tactgtcatt atggagccct gcagactgag ggctcccctt      120
gtctgcagga tttgatgtct gaagtcgtgg agtgtggctt ggagctcctc atctacatna      180
gctggaagcc ctggagggcc tctctcgcca gctccccctt tctctccacg ctctccangg      240
acaccagggg ctccaggcag cccattattc ccagnangac atgggtgttc tccacgcgga      300
cccatggggc ctgnaaggcc agggctcctt ttgacaccat ctctcccgtc ctgcctggca      360
ggcctgtgga tccactantt ctanaacggn cgccaccncg gtgggagctc cagcttttgt      420
tcccnttaat gaaggttaat tgcncgcttg gcgtaatcat nggtcanaac tntttcctgt      480
gtgaaattgt ttntcccctc ncnattccnc ncnacatacn aacccggaan cataaagtgt      540
taaagcctgg gggtngcctn nngaanaaac tnaactcaat taattgcgtt ggctcatggc      600
ccgctttccn ttcnngaaaa ctgtcntccc ctgcnttnnt gaatcggcca cccccnngg      660
aaaagcggtt tgcnttttng ggggntcctt ccncttcccc cctcnctaan cctnecgct      720
cggtcgttnc nggtngcggg gaangggnat nnnctccnc naagggggng agnnngntat      780
ccccaaa

```

<210> 31

<211> 799

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(799)

<223> n = A,T,C or G

<400> 31

```

tttttttttt tttttttggc gatgctactg ttttaattgca ggaggtgggg gtgtgtgtac      60
catgtaccag ggctattaga agcaagaagg aaggagggag ggcagagcgc cctgctgagc      120
aacaaaggac tcctgcagcc ttctctgtct gtctcttggc gcaggcacat ggggaggcct      180
cccgcagggt gggggccacc agtccagggg tgggagcact acanggggtg ggagtggggtg      240
gtgggtggtt cnaatggcct gncacanatc cctacgattc ttgacacctg gatttcacca      300
ggggaccttc tgttctccca nggnaacttc nttnatctcn aaagaacaca actgtttctt      360
cngcanttct ggctgttcat ggaaagcaca ggtgtccnat ttnggctggg acttggtaca      420
tatggttccg gcccacctct ccnctcnaan aagtaattca ccccccccn cctctnttg      480
cctgggccct taantaccca caccggaact canttanta ttcatcttng gntgggcttg      540
ntnatcnccn cctgaangcg ccaagttgaa aggccacgcc gtncnctc cccatagnan      600
nttttnncnt canctaagc cccccnngc aacnatccaa tcccccccn tgggggcccc      660
agcccanggc ccccgntcgc ggnnncnngn cncgnantcc ccaggntctc ccantcngnc      720
ccnnngcncc cccgcacgca gaacanaagg ntngagccnc cgcannnnnn nggtnnnac      780
ctcgccccc cncnngnng

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<210> 32

<211> 789

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(789)

<223> n = A,T,C or G

<400> 32

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tttttncnag	ggcagggttta	ttgacaacct	cncgggacac	aancaggctg	gggacaggac	120
ggcaacaggc	tccggcgggc	gcggcgggcg	ccctacctgc	ggtaccaa	ntgcagcctc	180
cgctcccgt	tgatnttcc	ctgcagctgc	aggatgcct	aaaacagggc	ctcggcctn	240
ggtgggcacc	ctgggatttn	aatttccacg	ggcacaatgc	ggtcgcanc	cctcaccacc	300
nattaggaat	agtggtnnta	cccncnccg	ttggcncact	cccctggaa	accacttntc	360
gcggctccgg	catctgggtc	taaaccttgc	aaacnctggg	gccctctttt	tggttantnt	420
nccngccaca	atcatnactc	agactggcnc	gggctggccc	caaaaaancn	ccccaaaacc	480
ggnccatgtc	ttnnccgggt	tgctgcnatn	tncatcacct	cccgggcnc	ncaggncaac	540
ccaaaagttc	ttgngggccn	caaaaaanct	ccggggggnc	ccagtttcaa	caaagtcac	600
ccccttggcc	cccaaatact	ccccccgntt	nctgggtttg	ggaacccacg	cctctnnctt	660
tggnnggcaa	gntggntccc	ccttcggggc	cccgggtggg	ccnctctaa	ngaaaaacnc	720
ntcctnnnca	ccatccccc	nngnnacgnc	tancaangna	tccctttttt	tanaaacggg	780
ccccccnccg						789

<210> 33

<211> 793

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(793)

<223> n = A,T,C or G

<400> 33

gacagaacat	ggtggatggt	ggagcacctt	tctatacgac	ttacaggaca	gcagatgggg	60
aattcatggc	tggtggagca	atanaacccc	agttctacga	gctgctgac	aaaggacttg	120
gactaaagtc	tgatgaactt	cccaatcaga	tgagcatgga	tgattggcca	gaaatgaana	180
agaagtttgc	agatgtattt	gcaaagaaga	cgaaggcaga	gtggtgtcaa	atctttgacg	240
gcacagatgc	ctgtgtgact	ccggttctga	cttttgagga	ggttgttcat	catgatcaca	300
acaangaacg	gggctcggtt	atcaccantg	aggagcagga	cgtgagcccc	cgccctgcac	360
ctctgctggt	aaacacccca	gccatccctt	ctttcaaaaag	ggatccacta	cttctagagc	420
ggnccgccacc	gcgggtggagc	tccagctttt	gttcccttta	gtgagggtta	attgcgcgct	480
tggcgtaatc	atgggtcatan	ctgtttcctg	tgtgaaattg	ttatccgctc	acaattccac	540
acaacatacg	anccggaagc	atnaaaattt	aaagcctggg	ggtngcctaa	tgantgaact	600
nactcacatt	aattggcttt	gcgctcactg	cccgtttcc	agtccggaaa	acctgtcctt	660
gccagctgcc	nttaatgaat	cnggccaccc	cccggggaaa	aggcngtttg	cttnttgggg	720
cgcncttccc	gctttctcgc	ttcctgaant	ccttccccc	ggtctttcgg	cttgcggcna	780
acggatcna	cct					793

<210> 34

<211> 756

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(756)

<223> n = A,T,C or G

<400> 34

gccgcgaccg	gcatgtacga	gcaactcaag	ggcgagtggg	accgtaaaag	ccccaatctt	60
ancaagtgcg	gggaanagct	gggtcgactc	aagctagttc	ttctggagct	caacttcttg	120

ccaaccacag	ggaccaagct	gaccaaacag	cagctaattc	tggcccgtga	catactggag	180
atcgggggcc	aatggagcat	cctacgcaan	gacatcccc	ccttcgagcg	ctacatggcc	240
cagctcaa	gctactactt	tgattacaan	gagcagctcc	ccgagtcagc	ctatatgcac	300
cagctcttgg	gcctcaacct	cctcttcctg	ctgtcccaga	accgggtggc	tgantnccac	360
acgganttgg	ancggctgcc	tgcccaanga	catacanacc	aatgtctaca	tcnaccacca	420
gtgtcctgga	gcaatactga	tgganggcag	ctaccncaaa	gtnttcctgg	ccnagggtaa	480
catccccgc	cgagagctac	accttcttca	ttgacatcct	gctcgacact	atcaggggatg	540
aaaatcgcn	ggttgctcca	gaaaggctnc	aanaanattc	ttttcnctga	aggcccccg	600
atncnctagt	nctagaatcg	gccccccatc	gcggtgganc	ctccaacctt	tcgttnccct	660
ttactgaggg	ttnattgccg	cccttggcgt	tatcatggtc	acncngttn	cctgtgttga	720
aattnttaac	ccccacaa	tccacgccna	catnng			756

<210> 35

<211> 834

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(834)

<223> n = A,T,C or G

<400> 35

gggatctct	anatchacct	gnatgcatgg	ttgtcggtgt	ggtcgctgtc	gatgaanatg	60
aacaggatct	tgcccttgaa	gctctcggt	gctgtnttta	agttgctcag	tctgccgtca	120
tagtcagaca	cnctcttggg	caaaaaacan	caggatntga	gtcttgattt	cacctccaat	180
aatcttcngg	gctgtctgct	cggtgaactc	gatgacnang	ggcagctggg	tgtgtntgat	240
aaantccanc	angttctcct	tggtgacctc	cccttcaaa	ttgttcgggc	cttcacaaa	300
cttctnnaan	angannanc	cantttgtc	gagctggnat	ttgganaaca	cgtcaccgtt	360
ggaaactgat	cccaaaggt	atgtcatcca	tcgcctctgc	tgcttgcaaa	aaacttgctt	420
ggcncaaate	cgactcccn	tccttgaaag	aagccnatca	cacccccctc	cctggactcc	480
nncaangact	ctnccgctnc	ccntccnng	cagggttggt	ggcannccgg	gccntgcgc	540
ttcttcagcc	agttcacnat	nttcacagc	ccctctgcca	gctgtnttat	tccttggggg	600
ggaanccgct	tctcccttc	tgaannaact	ttgaccgtng	gaatagccgc	gcntcnccnt	660
acntnctggg	ccgggttcaa	antccctccn	ttgncntcn	cctcgggcca	ttctggattt	720
nccnaacttt	ttccttcccc	cncctccnng	ngtttggnnt	tttcatnggg	ccccaaactc	780
gctnttggcc	antccctgg	gggcntntan	cncctccnt	ggcc		834

<210> 36

<211> 814

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(814)

<223> n = A,T,C or G

<400> 36

cggnccgctt	ccngccgcgc	cccgtttcca	tgacnaagge	tccttcang	ttaaatacnn	60
cctagnaaac	attaatgggt	tgctctacta	atacatcata	cnaaccagta	agcctgcccc	120
naacgccaac	tcaggccatt	cctaccaaag	gaagaaaggc	tggtctctcc	acccctgta	180
ggaaaggcct	gccttgtaag	acaccacaat	ncggctgaat	ctnaagtctt	gtgttttact	240
aatggaaaaa	aaaaataaac	aanagggttt	gttctcatgg	ctgccaccgc	cagcctggca	300
ctaaaacanc	ccagcgctca	cttctgcttg	ganaaatatt	ctttgctctt	ttggacatca	360

ggcttgatgg	tatcactgcc	acntttccac	ccagctgggc	ncccttcccc	catntttgtc	420
antganctgg	aaggcctgaa	ncttagtctc	caaaagtctc	ngcccacaag	accggccacc	480
aggggagtc	ntttncagtg	gatctgccaa	anantaccn	tatcatcnnt	gaataaaaag	540
gcccctgaac	ganatgcttc	cancancctt	taagacccat	aatcctngaa	ccatgggtgcc	600
cttccgggtct	gatccnaaag	gaatgttcc	gggtcccant	ccctcctttg	ttntttacgt	660
tgtnttggac	ccntgctngn	atnaccnaan	tganatcccc	ngaagcaccc	tnccctggc	720
atttganttt	cntaaattct	ctgccctacn	nctgaaagca	cnattccctn	ggcnccnaan	780
ggngaactca	agaagggtctn	ngaaaaacca	cncn			814

<210> 37

<211> 760

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(760)

<223> n = A,T,C or G

<400> 37

gcatgctgct	cttcctcaaa	gttgttcttg	ttgccataac	aaccaccata	ggtaaagcgg	60
gcgcagtgtt	cgctgaagg	gttgtagtac	cagcgcgga	tgctctcctt	gcagagtcct	120
gtgtctggca	gggtccacgca	atgccctttg	tactgggga	aatggatgcg	ctggagctcg	180
tcnaanccac	tcgtgtattt	ttcacangca	gcctcctccg	aagcntccgg	gcagtgggg	240
gtgtcgtcac	actccactaa	actgtcgatn	cancagccca	ttgctgcagc	ggaactgggt	300
gggctgacag	gtgccagaac	acactggatn	ggcctttcca	tggaaagggc	tgggggaaat	360
cncctnancc	caaactgcct	ctcaaaggcc	accttgacac	ccccgacagg	ctagaaatgc	420
actcttcttc	ccaaaggtag	ttgttcttgt	tgcccaagca	ncctccanca	aacccaaaanc	480
ttgcaaaatc	tgctccgtgg	gggtcatnnn	taccanggtt	ggggaaanaa	acccggcngn	540
ganccncctt	gtttgaatgc	naaggnaata	atcctcctgt	cttgcttggg	tggaaanagca	600
caattgaact	gttaacnttg	ggccnggttc	cnctnggggtg	gtctgaaact	aatcaccgtc	660
actggaaaaa	ggtangtgcc	ttccttgaat	tcccaaannt	cccctngntt	tgggtntttt	720
ctcctctncc	ctaaaaatcg	tnttcccccc	ccntanggcg			760

<210> 38

<211> 724

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(724)

<223> n = A,T,C or G

<400> 38

tttttttttt	tttttttttt	tttttttttt	tttttaaaaa	ccccctccat	tgaatgaaaa	60
cttccnaaat	tgtccaaccc	cctcnnccaa	atnnccattt	ccgggggggg	gttccaaacc	120
caaattaatt	ttgganttta	aattaaatnt	tnattngggg	aanaanccaa	atgtnaagaa	180
aatttaaccc	attatnaact	taaatnccn	gaaaccntg	gnttccaaaa	atttttaacc	240
cttaaatccc	tccgaaattg	ntaanggaaa	accaaattcn	cctaaggctn	tttgaaggtt	300
ngatttaaac	ccccttnant	tnttttnacc	cnngnctnaa	ntatttngnt	tccggtgttt	360
tcctnttaan	cntnggtaac	tcccgnataa	gaannnccct	aanccaatta	aaccgaattt	420
tttttgaatt	ggaaattccn	ngggaattna	ccgggggttt	tcccnttttg	gggccatncc	480
ccncttttcg	gggtttgggn	ntaggttgaa	tttttnnang	ncccaaaaaa	ncccccaana	540
aaaaaactcc	caagnnttaa	ttngaattnc	ccccttccca	ggccttttgg	gaaaggnggg	600

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tttntggggg ccngggantt cnttcccccn ttncncccc ccccccnggt aaanggttat    660
ngnnttttgg ttttggggccc cttnanggac cttccggatn gaaattaaat ccccgggncg    720
gccg                                724

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<210> 39
<211> 751
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(751)
<223> n = A,T,C or G

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<400> 39
tttttttttt tttttctttg ctcacattta atttttatatt tgattttttt taatgctgca    60
caacacaata tttatttcat ttgtttcttt tatttcattt tatttgtttg ctgctgctgt    120
tttatttatt tttactgaaa gtgagagggg acttttggtg ccttttttcc tttttctgta    180
ggccgcctta agctttctaa atttggaaca tctaagcaag ctgaanggaa aaggggggtt    240
cgcaaaatca ctcgggggaa nggaaagggt gctttgttaa tcatgcccta tgggtgggtga    300
ttaactgctt gtacaattac ntttcacttt taattaattg tgctnaangc ttttaattana    360
cttggggggt ccttccccc accaaccenn ctgacaaaaa gtgccngccc tcaaatnatg    420
tcccggcnnt cnttgaaaca cacngcngaa ngttctcatt ntccccncnc caggtnaaaa    480
tgaagggtta ccatntttaa cncacacctc acntggcnnn gcctgaatcc tcnaaaancn    540
ccctcaancn aattnctnng ccccggtenc gentnngtc cccccgggt ccggaantn    600
cacccccnga anncnntnnc naacnaaatt ccgaaaatat tcccnntcnc tcaattcccc    660
cnnagactnt cctcnnncan cncaattttc ttttnttcac gaacncgnnc cnaaaaatgn    720
nnnnncctc cncnngtcn naatcnccan c                                751

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<210> 40
<211> 753
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(753)
<223> n = A,T,C or G

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<400> 40
gtgggtatatt ctgtaagatc aggtgttcct ccctcgtagg tttagaggaa acaccctcat    60
agatgaaaac ccccccgaga cagcagcact gcaactgcca agcagccggg gtaggagggg    120
cgccctatgc acagctgggg ccttgagaca gcagggttc gatgtcaggc tcgatgtcaa    180
tggtctggaa gcggcggtg tacctgcgta ggggcacacc gtcagggcc accaggaact    240
tctcaaagtt ccaggcaacn tcgttgcgac acaccggaga ccagggtgatn agcttgggggt    300
cggtcataan cgcggtggcg tcgtcgctgg gagctggcag ggcctcccgc aggaaggcna    360
ataaaagggt cgcccccgca ccgttcant cgcacttctc naanaccatg angttggggt    420
cnaaccacc accannccgg acttccttga nggaattccc aaatctcttc gntcttgggc    480
ttctnctgat gccctanctg gttgcccngn atgccaanca nccccaancc ccgggggtcct    540
aaancaccn cctctctnt tcatctgggt tntntcccc ggaccntggt tctctcaag    600
ggancccata tctcnaccan tactcacnt nccccccnt gnnaccanc cttctanngn    660
tccccnccg ncctctggcc cntcaaanan gcttnacna cctgggtctg ccttcccccc    720
tncctatct gnaccnncn tttgtctcan tnt                                753

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<210> 41

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<211> 341
 <212> DNA
 <213> Homo sapien

<400> 41
 actatatcca tcacaacaga catgcttcat cccatagact tcttgacata gcttcaaagt 60
 agtgaaccca tccttgattt atatacatat atgttctcag tattttggga gcctttccac 120
 ttctttaaac cttgttcatt atgaacactg aaaataggaa tttgtgaaga gttaaaaagt 180
 tatagcttgt ttacgtagta agtttttgaa gtctacattc aatccagaca cttagttgag 240
 tgttaaactg tgatttttaa aaaatatcat ttgagaatat tctttcagag gtattttcat 300
 ttttactttt tgattaattg tgttttatat attagggtag t 341

<210> 42
 <211> 101
 <212> DNA
 <213> Homo sapien

<400> 42
 acttactgaa ttttagttctg tgctcttcct tatttagtgt tgtatcataa atactttgat 60
 gtttcaaaca ttctaaataa ataattttca gtggcttcat a 101

<210> 43
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 43
 acatctttgt tacagtctaa gatgtgttct taaatcacca ttccttcctg gtcttcaccc 60
 tccaggggtg tctcacactg taattagagc tattgaggag tctttacagc aaattaagat 120
 tcagatgcct tgctaagtct agagttctag agttatgttt cagaaagtct aagaaaccca 180
 cctcttgaga ggtcagtaaa gaggacttaa tatttcatat ctacaaaatg accacaggat 240
 tggatacaga acgagagtta tcttgataa ctcagagctg agtacctgcc cgggggcccgc 300
 tcgaa 305

<210> 44
 <211> 852
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (852)
 <223> n = A,T,C or G

<400> 44
 acataaatat cagagaaaag tagtctttga aatatttacg tccaggagt ttttgtttct 60
 gattatttgg tgtgtgtttt ggtttgtgtc caaagtattg gcagcttcag ttttcatttt 120
 ctctccatcc tcgggcattc ttcccaaatt tatataccag tcttcgtcca tccacacgct 180
 ccagaatttc tctttttag taatatctca tagctcggct gagcttttca taggtcatgc 240
 tgctgttgtt cttcttttta ccccatagct gagccactgc ctctgatttc aagaacctga 300
 agacgccctc agatcgggtc tcccatttta ttaatcctgg gttcttgtct gggttcaaga 360
 ggatgtcgcg gatgaattcc cataagttag tccctctcgg gttgtgtctt ttgggtgtggc 420
 acttggcagg ggggtcttgc tcttttttca tatcagggtga ctctgcaaca ggaagggtgac 480
 tgggtggtgt catggagatc tgagcccggc agaaagtttt gctgtccaac aaatctactg 540
 tgctaccata gttgggtgtc tataaatagt tctngtcttt ccagggtgtc atgatggaag 600

gctcagtttg	ttcagtccttg	acaatgacat	tgtgtgtgga	ctggaacagg	tcactactgc	660
actggccggt	ccacttcaga	tgctgcaagt	tgctgtagag	gagntgcccc	gccgtccctg	720
ccgcccgggt	gaactcctgc	aaatcatgc	tgcaaagggtg	ctcgccgttg	atgtcgaact	780
cntggaaaagg	gatacaattg	gcattccagct	ggttggtgtc	caggaggtga	tggagccact	840
cccacacctg	gt					852

<210> 45

<211> 234

<212> DNA

<213> Homo sapien

<400> 45

acaacagacc	cttgctcgct	aacgacctca	tgctcatcaa	gttggacgaa	tccgtgtccg	60
agtctgacac	catccggagc	atcagcattg	cttcgcagtg	ccctaccgcg	gggaactctt	120
gcctcgtttc	tggctgggggt	ctgctggcga	acggcagaat	gcctaccgtg	ctgcagtgcg	180
tgaacgtgtc	ggtggtgtct	gaggaggtct	gcagtaagct	ctatgacccg	ctgt	234

<210> 46

<211> 590

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (590)

<223> n = A,T,C or G

<400> 46

actttttatt	taaatgttta	taaggcagat	ctatgagaat	gatagaaaac	atgggtgtgta	60
atttgatagc	aatatttttg	agattacaga	gttttagtaa	ttaccaatta	cacagttaaa	120
aagaagataa	tatattccaa	gcanatacaa	aatatcta	gaaagatcaa	ggcaggaaaa	180
tgantataac	taattgacaa	tggaaaatca	attttaatgt	gaattgcaca	ttatccttta	240
aaagctttca	aaanaanaa	ttattgcagt	ctanttaatt	caaacagtgt	taaatgggtat	300
caggataaan	aactgaagg	canaaaaga	taattttcac	ttcatgtaac	ncacccanat	360
ttacaatggc	ttaaatgcan	ggaaaaagca	gtggaagtag	ggaagtantc	aaggtctttc	420
tggctctctaa	tctgccttac	tctttgggtg	tggctttgat	cctctggaga	cagctgccag	480
ggctcctggt	atatccacaa	tcccagcagc	aagatgaagg	gatgaaaaag	gacacatgct	540
gccttccttt	gaggagactt	catctcactg	gccaacactc	agtcacatgt		590

<210> 47

<211> 774

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (774)

<223> n = A,T,C or G

<400> 47

acaagggggc	ataatgaagg	agtggggana	gatttttaaag	aaggaaaaaa	aacgaggccc	60
tgaacagaat	tttctgnac	aacggggctt	caaaataatt	ttcttgggga	ggttcaagac	120
gcttactgc	ttgaaactta	aatggatgtg	ggacanaatt	ttctgtaatg	accctgaggg	180
cattacagac	gggactctgg	gaggaaggat	aaacagaaaag	gggacaaaag	ctaataccaa	240
aacatcaaag	aaaggaaggt	ggcgtcatac	ctcccagcct	acacagttct	ccaggggctct	300

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cctcatccct ggaggacgac agtggaggaa caactgacca tgtccccagg ctctgtgtg      360
ctggctcctg gtcttcagcc cccagctctg gaagcccacc ctctgctgat cctgcgtggc      420
ccacactcct tgaacacaca tccccaggtt atattcctgg acatggctga acctcctatt      480
cctacttccg agatgccttg ctccctgcag cctgtcaaaa tcccaactac cctccaaacc      540
acggcatggg aagcctttct gacttgcttg attactccag catcttggaa caatccctga      600
ttccccactc cttagaggca agataggggt gttaagagta gggctggacc acttggagcc      660
aggctgctgg cttcaaattn tggctcattt acgagctatg ggaccttggg caagtnatct      720
tcacttctat gggcntcatt ttgttctacc tgcaaaatgg gggataataa tagt          774

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<210> 48

<211> 124

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(124)

<223> n = A,T,C or G

<400> 48

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canaaattga aattttataa aaaggcattt ttctcttata tccataaaat gatataattt      60
ttgcaantat anaaatgtgt cataaattat aatgttcctt aattacagct caacgcaact      120
tggt                                              124

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<210> 49

<211> 147

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(147)

<223> n = A,T,C or G

<400> 49

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gccgatgcta ctattttatt gcaggagggt ggggtgtttt tattattctc tcaacagctt      60
tgtggctaca ggtgggtgtc gactgcatna aaaanttttt tacgggtgat tgcaaaaatt      120
ttagggcacc catatcccaa gcantgt                      147

```

<210> 50

<211> 107

<212> DNA

<213> Homo sapien

<400> 50

```

acattaaatt aataaaagga ctgttgggggt tctgctaaaa cacatggctt gatatatattgc      60
atggtttgag gttaggagga gttaggcata tgttttggga gaggggt                      107

```

<210> 51

<211> 204

<212> DNA

<213> Homo sapien

<400> 51

```

gtcctaggaa gtctagggga cacacgactc tggggtcacg gggccgacac acttgcacgg      60

```


cggggaaggaa aggcagagaa gtgacaccgt caggggggaaa tgacagaaag gaaaatcaag	120
gccttgcaag gtcagaaagg ggactcaggg cttccaccac agccctgccc cacttggcca	180
cctccctttt gggaccagca atgt	204

<210> 52
 <211> 491
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(491)
 <223> n = A,T,C or G

<400> 52	
acaaagataa catttatctt ataacaaaaa tttgatagtt ttaaagggtta gtattgtgta	60
gggtattttc caaaagacta aagagataac tcaggtaaaa agttagaaat gtataaaaca	120
ccatcagaca ggttttttaa aaacaacata ttacaaaatt agacaatcat ccttaaaaaa	180
aaaacttctt gtatcaattt cttttgttca aaatgactga cttaantatt tttaaatatt	240
tcanaaacac ttctcaaaa attttcaana tggtagcttt canatgtnc ctcagtccca	300
atggtgctca gataaataaa tctcgtgaga acttaccacc caccacaagc tttctggggc	360
atgcaacagt gtcttttctt tcttttttct tttttttttt ttacaggcac agaaactcat	420
caattttatt tggataacaa agggctcca aattatattg aaaaataaat ccaagttaat	480
atcactcttg t	491

<210> 53
 <211> 484
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(484)
 <223> n = A,T,C or G

<400> 53	
acataattta gcagggctaa ttaccataag atgctattta ttaanaggtn tatgatctga	60
gtattaacag ttgctgaagt ttggtatttt tatgcagcat tttctttttg ctttgataac	120
actacagaac ccttaaggac actgaaaatt agtaagtaaa gttcagaaac attagctgct	180
caatcaaate tctacataac actatagtaa ttaaaacgtt aaaaaaaagt gttgaaatct	240
gcactagtat anaccgctcc tgtcaggata anactgcttt ggaacagaaa gggaaaaanc	300
agctttgant ttctttgtgc tgatangagg aaaggctgaa ttaccttgtt gcctctccct	360
aatgattggc aggtcnggta aatnccaaaa catattccaa ctcaacactt cttttccncg	420
tancttgant ctgtgtattc caggancagg cggatggaat gggccagccc ncggatgttc	480
cant	484

<210> 54
 <211> 151
 <212> DNA
 <213> Homo sapien

<400> 54	
actaaacctc gtgcttgtga actccataca gaaaacgggtg ccatccctga acacggctgg	60
ccactgggta tactgtgtgac aaccgcaaca acaaaaacac aaatccttgg cactggctag	120
tctatgtcct ctcaagtgcc tttttgtttg t	151

<210> 55
 <211> 91
 <212> DNA
 <213> Homo sapien

<400> 55
 acctggccttg tctccgggtg gttcccggcg cccccacgg tccccagaac ggacactttc 60
 gccctccagt ggatactga gccaaagtgg t 91

<210> 56
 <211> 133
 <212> DNA
 <213> Homo sapien

<400> 56
 ggcggatgtg cggttggtat atacaaatat gtcattttat gtaagggact tgagtatact 60
 tggatttttg gtatctgtgg gttgggggga cgggccagga accaataccc catggatacc 120
 aagggacaac tgt 133

<210> 57
 <211> 147
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(147)
 <223> n = A,T,C or G

<400> 57
 actctggaga acctgagccg ctgctccgcc tctgggatga ggtgatgcan gcngtggcgc 60
 gactgggagc tgagcccttc cctttgcgcc tgcctcagag gattgttgcc gacntgcana 120
 tctcantggg ctggatncat gcagggt 147

<210> 58
 <211> 198
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(198)
 <223> n = A,T,C or G

<400> 58
 acagggatat aggtttnaag ttattgtnat tgtaaaatac attgaatttt ctgtatactc 60
 tgattacata catttatcct ttaaaaaaga tgtaaatcct aatttttatg ccattctatta 120
 atttaccat gagttacctt gtaaatagaga agtcatgata gcactgaatt ttaactagtt 180
 ttgacttcta agtttggt 198

<210> 59
 <211> 330
 <212> DNA
 <213> Homo sapien

<400> 59

acaacaaatg ggttgtgagg aagtcttatac agcaaaactg gtgatggcta ctgaaaagat	60
ccattgaaaa ttatcattaa tgattttaaa tgacaagtta tcaaaaactc actcaatttt	120
cacctgtgct agcttgctaa aatgggagtt aactctagag caaatatagt atctttctgaa	180
tacagtcaat aaatgacaaa gccagggcct acaggtgggt tccagacttt ccagacccag	240
cagaaggaat ctattttatac acatggatct ccgtctgtgc tcaaaatacc taatgatatt	300
tttcgtcttt attggacttc tttgaagagt	330

<210> 60

<211> 175

<212> DNA

<213> Homo sapien

<400> 60

accgtgggtg ccttctacat tcttgacggc tcttccacca acatctgggt ctacttcggc	60
gtcgtgggct ccttcctctt catcctcacc cagctgggtg tgctcatcga ctttgcgac	120
tcttggaaac agcgggtggc gggcaaggcc gaggagtgcg attcccgtgc ctggt	175

<210> 61

<211> 154

<212> DNA

<213> Homo sapien

<400> 61

acccactttt tcttctgtg agcagtctgg acttctcact gctacatgat gagggtgagt	60
ggttggtgct cttcaacagt atctctccct ttccggatct gctgagccgg acagcagtgc	120
tggactgcac agccccgggg ctccacattg ctgt	154

<210> 62

<211> 30

<212> DNA

<213> Homo sapien

<400> 62

cgctcgagcc ctatagttag tctgattaga	30
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<210> 63

<211> 89

<212> DNA

<213> Homo sapien

<400> 63

acaagtcatt tcagcaccct ttgtcttca aaactgacca tcttttatat ttaatgcttc	60
ctgtatgaat aaaaatgggt atgtcaagt	89

<210> 64

<211> 97

<212> DNA

<213> Homo sapien

<400> 64

accggagtaa ctgagtcggg acgctgaatc tgaatccacc aataaataaa gggtctgcag	60
aatcagtgc tccaggattg gtccttggat ctggggg	97

<210> 65
 <211> 377
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (377)
 <223> n = A,T,C or G

<400> 65
 acaacaanaa ntcccttctt taggccactg atggaaacct ggaaccccct tttgatggca 60
 gcatggcgct ctaggccttg acacagcggc tgggggtttgg gctntcccaa accgcacacc 120
 ccaaccctgg tctaccaca nttctggcta tgggctgtct ctgccactga acatcagggg 180
 tcggtcataa natgaaatcc caanggggac agagggtcagt agaggaagct caatgagaaa 240
 ggtgctgttt gctcagccag aaaacagctg cctggcattc gccgctgaac tatgaaccgg 300
 tgggggtgaa ctaccccan gaggaatcat gcctgggcga tgcaanggtg ccaacaggag 360
 gggcgggagg agcatgt 377

<210> 66
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 66
 acgcctttcc ctcagaattc agggaagaga ctgtgcctg ccttcctccg ttgttgctg 60
 agaaccctg tgcccttcc caccatatcc accctcgctc catctttgaa ctcaaacacg 120
 aggaactaac tgcaccctgg tctctcccc agtccccagt tcaccctcca tccctcacct 180
 tctccactc taagggatat caacactgcc cagcacaggg gccctgaatt tatgtggtt 240
 ttatatattt ttaataaga tgcactttat gtcatttttt aataaagtct gaagaattac 300
 tggtt 305

<210> 67
 <211> 385
 <212> DNA
 <213> Homo sapien

<400> 67
 actacacaca ctccacttgc ccttgtgaga cactttgtcc cagcacttta ggaatgctga 60
 ggtcggacca gccacatctc atgtgcaaga ttgcccagca gacatcaggt ctgagagttc 120
 cccttttaaa aaaggggact tgcttaaaaa agaagtctag ccacgattgt gtagagcagc 180
 tgtgctgtgc tggagattca cttttgagag agttctcctc tgagacctga tctttagagg 240
 ctgggcagtc ttgcacatga gatggggctg gtctgatctc agcactcctt agtctgcttg 300
 cctctcccag ggcccagcc tggccacacc tgcttacagg gcactctcag atgcccatac 360
 catagtttct gtgctagtgg accgt 385

<210> 68
 <211> 73
 <212> DNA
 <213> Homo sapien

<400> 68
 acttaaccag atatattttt accccagatg gggatattct ttgtaaaaaa tgaaaataaa 60
 gtttttttaa tgg 73

<210> 69
 <211> 536
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(536)
 <223> n = A,T,C or G

<400> 69
 actagtccag tgtggtggaa ttccattgtg ttgggggctc tcaccctcct ctctctgcagc 60
 tccagctttg tgctctgcct ctgaggagac catggcccag catctgagta ccctgctgct 120
 cctgctggcc accctagctg tggccctggc ctggagcccc aaggaggagg ataggataat 180
 cccgggtggc atctataacg cagacctcaa tgatgagtgg gtacagcgtg cccttcactt 240
 cgccatcagc gagtataaca aggccaccaa agatgactac tacagacgtc cgctgcgggt 300
 actaagagcc aggcaacaga ccgttggggg ggtgaattac ttcttcgacg tagagggtggg 360
 ccgaaccata tgtaccaagt cccagcccaa cttggacacc tgtgccttcc atgaacagcc 420
 agaactgcag aagaaacagt tgtgctcttt cgagatctac gaagtccct ggggagaaca 480
 gaangtcctt gggtgaaatc caggtgtcaa gaaatcctan ggatctgttg ccaggc 536

<210> 70
 <211> 477
 <212> DNA
 <213> Homo sapien

<400> 70
 atgacccta acagggggccc tctcagccct cctaattgacc tccggcctag ccattgtgatt 60
 tcacttccac tccataacgc tctctact actgacctact accaacacac taaccatata 120
 ccaatgatgg cgcgatgtaa cagagaaaag cacataccaa ggccaccaca caccacctgt 180
 ccaaaaaggc ctctgatacg ggataatcct atttattacc tcagaagttt ttttcttcgc 240
 agggattttt ctgagccttt taccactcca gcctagcccc taccctccaa ctaggagggc 300
 actggccccc aacaggcatc accccgctaa atcccctaga agtcccactc ctaaaccat 360
 ccgtattact cgcatacagga gtatcaatca cctgagctca ccatagtcta atagaaaaca 420
 accgaaacca aattattcaa agcactgctt attacaattt tactgggtct ctatttt 477

<210> 71
 <211> 533
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(533)
 <223> n = A,T,C or G

<400> 71
 agagctatag gtacagtgtg atctcagctt tgcaaacaca ttttctacat agatagtact 60
 aggtattaat agatatgtaa agaaagaaat cacaccatta ataattggtaa gattgggtta 120
 tgtgatttta gtggtatttt tggcaccctt atatattgtt tccaaacttt cagcagtgat 180
 attatttcca taacttaaaa agtgagtgtt aaaaagaaaa tctccagcaa gcatctcatt 240
 taaataaagg tttgtcatct ttaaaaatac agcaatatgt gactttttta aaaagctgtc 300
 aaatagggtg gaccctacta ataattatta gaaatacatt taaaaacatc gagtacctca 360
 agtcagtttg ccttgaaaaa tatcaaatat aactcttaga gaaatgtaca taaaagaatg 420
 cttcgtaatt ttggagtang aggttccttc ctcaattttg tattttttaa aagtacatgg 480
 taaaaaaaaa aattcacaac agtatataag gctgtaaaat gaagaattct gcc 533

<210> 72
 <211> 511
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(511)
 <223> n = A,T,C or G

<400> 72
 tattacggaa aaacacacca cataattcaa ctancaaaga anactgcttc agggcggtgta 60
 aaatgaaagg cttccaggca gttatctgat taaagaacac taaaagaggg acaaggctaa 120
 aagccgcagg atgtctacac tatancaggc gctatttggg ttggctggag gagctgtgga 180
 aaacatggan agattggtgc tgganatcgc cgtggctatt cctcattgtt attacanagt 240
 gaggttctct gtgtgcccac tggtttgaaa accgttctnc aataatgata gaatagtaca 300
 cacatgagaa ctgaaatggc ccaaaccag aaagaaagcc caactagatc ctcagaanac 360
 gcttctaggg acaataaccg atgaagaaaa gatggcctcc ttgtgcccc gtctgttatg 420
 atttctctcc attgcagcna naaaccggtt cttctaagca aacncagggtg atgatggcna 480
 aaatacaccc cctcttgaag naccnggagg a 511

<210> 73
 <211> 499
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(499)
 <223> n = A,T,C or G

<400> 73
 cagtgccagc actggtgccca gtaccagtag caataacagt gccagtgccca gtgccagcac 60
 cagtgggtggc ttcagtgtcg gtgccagcct gaccgccact ctcacatttg ggctcttcgc 120
 tggccttggg ggagctgggt ccagcaccag tggcagctct ggtgcctgtg gtttctccta 180
 caagtgaagt tttagatatt gttaatcctg ccagtccttc tcttcaagcc aggggtgcac 240
 ctcagaaacc tactcaacac agcactctag gcagccacta tcaatcaatt gaagttgaca 300
 ctctgcatta aatctatttg ccatttctga aaaaaaaaaa aaaaaaaggg cggccgctcg 360
 antctagagg gcccgtttta acccgctgat cagcctcgac tgtgccttct anttgccagc 420
 catctgttgt ttgccccctc cccgntgcct tccttgacct tggaaagtgc cactcccact 480
 gtcccttctc aantaaaat 499

<210> 74
 <211> 537
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(537)
 <223> n = A,T,C or G

<400> 74
 tttcatagga gaacacactg aggagatact tgaagaattt ggattcagcc gcgaagagat 60

ttatcagctt	aactcagata	aaatcattga	aagtaataag	gtaaaagcta	gtctctaact	120
tccaggccca	cggctcaagt	gaatttgaat	actgcattta	cagtgtagag	taacacataa	180
cattgtatgc	atggaaacat	ggaggaacag	tattacagtg	tcctaccact	ctaatacaaga	240
aaagaattac	agactctgat	tctacagtga	tgattgaatt	ctaaaaatgg	taatcattag	300
ggcttttgat	ttataanact	ttgggtactt	atactaaatt	atggtagtta	tactgccttc	360
cagtttgctt	gatatatttg	ttgatattaa	gattccttgac	ttatatatttg	aatgggttct	420
actgaaaaan	gaatgatata	ttcttgaaga	catcgatata	catttattta	cactcttgat	480
tctacaatgt	agaaaatgaa	ggaaatgccc	caaattgtat	ggtgataaaa	gtcccg	537

<210> 75
 <211> 467
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (467)
 <223> n = A,T,C or G

<400> 75						
caaanacaat	tgttcaaaag	atgcaaata	tacactactg	ctgcagctca	caaacacctc	60
tgcataattac	acgtacctcc	tcctgctcct	caagtagtgt	ggtctatatt	gccatcatca	120
cctgctgtct	gcttagaaga	acggctttct	gctgcaangg	agagaaatca	taacagacgg	180
tggcacaagg	aggccatctt	ttcctcatcg	gttattgtcc	ctagaagcgt	cttctgagga	240
tctagttggg	ctttctttct	gggtttgggc	catttcantt	ctcatgtgtg	tactattcta	300
tcattattgt	ataacggttt	tcaaaccngt	gggracncag	agaacctcac	tctgtaataa	360
caatgaggaa	tagccacggt	gatctccagc	accaaactct	tccatgttnt	tccagagctc	420
ctccagccaa	cccaaatagc	cgctgctatn	gtgtagaaca	tcctctgn		467

<210> 76
 <211> 400
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (400)
 <223> n = A,T,C or G

<400> 76						
aagctgacag	cattcggggc	gagatgtctc	gctccgtggc	cttagctgtg	ctcgcgctac	60
tctctctttc	tggcctggag	gctatccagc	gtactccaaa	gattcaggtt	tactcacgtc	120
atccagcaga	gaatggaaa	tcaaatttcc	tgaattgcta	tgtgtctggg	tttcatccat	180
ccgacattga	agttgactta	ctgaagaatg	gagagagaat	tgaaaaagtg	gagcattcag	240
acttgctttt	cagcaaggac	tggtctttct	atctcttgta	ctacactgaa	ttcaccccca	300
ctgaaaaaga	tgagtatgcc	tgccgtgtga	accatgtgac	tttgtcacag	cccaagatng	360
ttnagtggga	tcganacatg	taagcagcan	catgggaggt			400

<210> 77
 <211> 248
 <212> DNA
 <213> Homo sapien

<400> 77						
ctggagtgcc	ttggtgtttc	aagcccctgc	aggaagcaga	atgcaccttc	tgaggcacct	60

ccagctgccc	cggcggggga	tgcgaggctc	ggagcaccct	tgcccggctg	tgattgctgc	120
caggcactgt	tcattctcagc	ttttctgtcc	ctttgtctcc	ggcaagcgct	tctgctgaaa	180
gttcatatct	ggagcctgat	gtcttaacga	ataaaggctc	catgctccac	ccgaaaaaaaa	240
aaaaaaaa						248

<210> 78

<211> 201

<212> DNA

<213> Homo sapien

<400> 78

actagtccag	tgtgggtggaa	ttccattgtg	ttgggcccga	cacaatggct	acctttaaca	60
tcacccagac	cccgccttgc	ccgtgcccga	cgctgctgct	aacgacagta	tgatgcttac	120
tctgtacttc	ggaaactatt	tttatgtaat	taatgtatgc	tttcttggtt	ataaatgcct	180
gatttaaaaa	aaaaaaaaaa	a				201

<210> 79

<211> 552

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(552)

<223> n = A,T,C or G

<400> 79

tccttttgtt	aggtttttga	gacaacccta	gacctaaact	gtgtcacaga	cttctgaatg	60
tttaggcagt	gctagtaatt	tcctcgtaat	gattctgtta	ttactttcct	attctttatt	120
cctctttcct	ctgaagatta	atgaagtga	aaattgaggt	ggataaatac	aaaaaggtag	180
tgtgatagta	taagtatcta	agtgcagatg	aaagtgtgtt	atatatatcc	attcaaaatt	240
atgcaagtta	gtaattactc	agggttaact	aaattacttt	aatatgctgt	tgaacctact	300
ctgttccttg	gctagaaaaa	attataaaca	ggactttggt	agtttgggaa	gccaaattga	360
taattattcta	tggtctaaaa	gttgggctat	acataaanta	tnaagaaata	tggaatttta	420
ttcccaggaa	tatgggggtt	atttatgaat	antaccggg	anagaagttt	tgantnaaac	480
cngttttggt	taatacgtta	atatgtcctn	aatnaacaag	gcntgactta	tttccaaaaa	540
aaaaaaaaaa	aa					552

<210> 80

<211> 476

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(476)

<223> n = A,T,C or G

<400> 80

acagggattt	gagatgctaa	ggccccagag	atcgtttgat	ccaaccctct	tattttcaga	60
ggggaaaatg	gggcctagaa	gttacagagc	atctagctgg	tgcgctggca	cccctggcct	120
cacacagact	cccagtagc	tgggactaca	ggcacacagt	cactgaagca	ggccctgttt	180
gcaattcacg	ttgccacctc	caacttaaac	attcttcata	tgtgatgtcc	ttagtcacta	240
aggttaaact	ttcccaccca	gaaaaggcaa	cttagataaa	atcttagagt	actttcatac	300
tcttctaagt	cctcttccag	cctcactttg	agtctctctt	gggggttgat	aggaantntc	360


```
tcttggtttt ctcaataaaa tctctatcca tctcatgttt aatttggtac gcntaaaaat 420
gctgaaaaaa ttaaaatgtt ctggtttcnc tttaaaaaaa aaaaaaaaaa aaaaaa 476
```

```
<210> 81
<211> 232
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(232)
<223> n = A,T,C or G
```

```
<400> 81
tttttttttg tatgcntcn ctgtgnggtt attgttgctg ccaccctgga ggagcccagt 60
ttcttctgta tctttctttt ctggggggtc ttcttggtc tgccctcca tccccagcct 120
ctcatcccca tcttgcaatt ttgctagggt tggaggcgt ttcttggtag cccctcagag 180
actcagtcag cgggaataag tcctaggggt ggggggtgtg gcaagccggc ct 232
```

```
<210> 82
<211> 383
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(383)
<223> n = A,T,C or G
```

```
<400> 82
aggcgggagc agaagctaaa gccaaagccc aagaagagtg gcagtgccag cactggtgcc 60
agtaccagta ccaataacat gccagtgccg gtgccagcac cagtgggtggc ttcagtgtg 120
gtgccagcct gaccgccact ctcacatttg ggctcttcgc tggccttggg ggagctgggt 180
ccagcaccag tggcagctct ggtgcctgtg gtttctccta caagtgagat tttagatatt 240
gttaatcctg ccagtctttc tcttcaagcc aggggtgcac ctcagaaacc tactcaacac 300
agcactctng gcagccacta tcaatcaatt gaagttgaca ctctgcatta aatctatttg 360
ccatttcaaa aaaaaaaaaa aaa 383
```

```
<210> 83
<211> 494
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(494)
<223> n = A,T,C or G
```

```
<400> 83
accgaattgg gaccgctggc ttataagcga tcatgtcctc cagtattacc tcaacgagca 60
gggagatcga gtctatacgc tgaagaaatt tgacccgatg ggacaacaga cctgctcagc 120
ccatcctgct cggttctccc cagatgacaa atactctcga caccgaatca ccatcaagaa 180
acgcttcaag gtgctcatga cccagcaacc gcgccctgtc ctctgagggg ccttaaactg 240
atgtcttttc tgccacctgt taccctcggg agactcggta accaaactct tcggactgtg 300
agccctgatg cttttttgcc agccatactc tttggcntcc agtctctcgt ggcgattgat 360
```

tatgcttgtg tgaggcaatc atggtggcat cacccatnaa gggaacacat ttganttttt	420
tttncatat tttaaattac naccagaata nttcagaata aatgaattga aaaactctta	480
aaaaaaaaaaaa aaaa	494

<210> 84
 <211> 380
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(380)
 <223> n = A,T,C or G

<400> 84	
gctggtagcc tatggcgtgg ccacggangg gctcctgagg cacgggacag tgacttccca	60
agtatcctgc gccgcgtctt ctaccgtccc tacctgcaga tcttcgggca gattccccag	120
gaggacatgg acgtggccct catggagcac agcaactgct cgtcggagcc cggcttctgg	180
gcacaccctc ctggggccca ggccgggacac tgcgtctccc agtatgccaa ctggctgggtg	240
gtgctgctcc tcgtcatctt cctgctcgtg gccaacatcc tgctggtcac ttgctcattg	300
ccatgttcag ttacacattc ggcaaagtac agggcaacag cnatctctac tgggaaggcc	360
agcgttnccg cctcatccgg	380

<210> 85
 <211> 481
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(481)
 <223> n = A,T,C or G

<400> 85	
gagttagctc ctccacaacc ttgatgaggt cgtctgcagt ggccctctcgc ttcataccgc	60
tnccatcgtc atactgtagg tttgccacca cctcctgcac cttggggcgg ctaatatcca	120
ggaaactctc aatcaagtca ccgtcnatna aacctgtggc tggttctgtc ttccgctcgg	180
tgtgaaagga tctccagaag gagtgtcga tcttccccac acttttgatg actttattga	240
gtcgattctg catgtccagc aggaggttgt accagctctc tgacagtgag gtcaccagcc	300
ctatcatgcc nttgaacgtg ccgaagaaca ccgagccttg tgtgggggggt gnagtctcac	360
ccagattctg cattaccaga nagccgtggc aaaaganatt gacaactcgc ccaggngaa	420
aaagaacacc tcctggaagt gctngccgct cctcgtccnt tgggtggngc gcntnccttt	480
t	481

<210> 86
 <211> 472
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(472)
 <223> n = A,T,C or G

<400> 86

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aacatcttcc tgtataatgc tgtgtaatat cgatccgatn ttgtctgctg agaattcatt      60
acttggaataa gcaacttnaa gcctggacac tgggtattaaa attcacaata tgcaacactt      120
taaacagtggt gtcaatctgc tcccttactt tgtcatcacc agtctgggaa taagggtatg      180
ccctattcac acctgttaaaa agggcgctaa gcatttttga ttcaacatct ttttttttga      240
cacaagtccg aaaaaagcaa aagtaaacag ttnttaattt gttagccaat tcacttttctt      300
catgggacag agccatttga tttaaaaagc aaattgcata atattgagct ttgggagctg      360
atatntgagc ggaagantag cttttctact tcaccagaca caactccttt catattggga      420
tgtnacnaa agttatgtct cttacagatg ggatgctttt gtggcaattc tg                472

```

```

<210> 87
<211> 413
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(413)
<223> n = A,T,C or G

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<400> 87
agaaaccagt atctctnaaa acaacctctc ataccttgtg gacctaattt tgtgtgctg      60
tgtgtgtgcg cgcataattat atagacaggc acatcttttt tacttttgta aaagcttatg      120
cctcttttgg atctatatct gtgaaagttt taatgatctg ccataatgtc ttggggacct      180
ttgtcttctg tgtaaattgg actagagaaa acacctatnt tatgagtcaa tctagttngt      240
tttattcgac atgaaggaaa tttccagatn acaacactna caaactctcc cttgactagg      300
ggggacaaaag aaaagcnaaa ctgaacatna gaaacaattn cctgggtgaga aatncataa      360
acagaaattg ggtngtatat tgaaanang catcattnaa acgttttttt ttt                413

```

```

<210> 88
<211> 448
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(448)
<223> n = A,T,C or G

```

```

<400> 88
cgcagcgggt cctctctatc tagctccagc ctctcgctg ccccaactccc cgcgtcccgc      60
gtcctagccn accatggccg ggccccctgc cgccccgctg ctctgtctgg ccatacctggc      120
cgtggccctg gccgtgagcc ccgcggccgg ctccagctcc ggcaagccgc cgcgcctggt      180
gggaggccca tggaccccgc gtggaagaag aagggtgtgc gcgtgcactg gactttgccg      240
tcggcnanta caacaaaccc gcaacnactt ttaccnagcn cgcgctgcag gttgtgccgc      300
cccaancaaa ttgttactng gggtaanata ttcttggaag ttgaacctgg gccaaacnng      360
tttaccagaa ccnagccaat tngaacaatt nccccccat aacagcccct tttaaaaagg      420
gaancantcc tgnctctttc caaat      448

```

```

<210> 89
<211> 463
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature

```

<222> (1)...(463)

<223> n = A,T,C or G

<400> 89

gaattttgtg	cactggccac	tgtgatggaa	ccattggggc	aggatgcttt	gagtttatca	60
gtagtgattc	tgccaaagtt	ggtgttgtaa	catgagtatg	taaaatgtca	aaaaattagc	120
agaggtctag	gtctgcatat	cagcagacag	tttgcccggtg	tattttgtag	ccttgaagtt	180
ctcagtgaca	agttntttct	gatgcgaagt	tctnattcca	gtgttttagt	cctttgcatc	240
tttnatgtn	agacttgccct	ctntnaaatt	gcttttgnnt	tctgcaggta	ctatctgtgg	300
tttaacaaaa	tagaannact	tctctgcttn	gaanatttga	atatcttaca	tctnaaaatn	360
aattctctcc	ccatannaaa	acccangccc	ttggganaat	ttgaaaaaang	gntccttcnn	420
aattcnnana	anttcagntn	tcatacaaca	naacngganc	ccc		463

<210> 90

<211> 400

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(400)

<223> n = A,T,C or G

<400> 90

agggattgaa	ggtctnttnt	actgtcggac	tgttcancca	ccaactctac	aagttgctgt	60
cttccactca	ctgtctgtaa	gcntnttaac	ccagactgta	tcttcataaa	tagaacaaat	120
tcttcaccag	tcacatcttc	taggaccttt	ttggattcag	ttagtataag	ctcttccact	180
tcctttgtta	agacttcatc	tggtaaagtc	ttaaagtttg	tagaaaggaa	tttaattgct	240
cgttctctaa	caatgtcctc	tccttgaagt	atttggtgta	acaaccacc	tnaagtcctt	300
ttgtgcatcc	attttaaaata	tacttaatag	ggcattggtn	cactagggtta	aattctgcaa	360
gagtcactctg	tctgcaaaaag	ttgcgttagt	atatctygca			400

<210> 91

<211> 480

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(480)

<223> n = A,T,C or G

<400> 91

gagctcggat	ccaataatct	ttgtctgagg	gcagcacaca	tatncagtgc	catggnaact	60
ggtctacccc	acatgggagc	agcatgccgt	agntatataa	ggtcattccc	tgagtcagac	120
atgcctcttt	gactaccgtg	tgccagtgtc	ggtgattctc	acacacctcc	nncgctctt	180
tgtggaaaaa	ctggcacttg	nctggaacta	gcaagacatc	acttacaaat	tcacccacga	240
gacacttgaa	aggtgtaaca	aagcgactct	tgcattgtct	tttgtccctc	cggcaccagt	300
tgtcaatact	aacccgctgg	tttgccctcca	tcacatttgt	gatctgtagc	tctggatata	360
tctcctgaca	gtactgaaga	acttcttctt	ttgtttcaaa	agcaactctt	ggtgcctggt	420
ngatcagggt	cccatttccc	agtcggaatg	ttcacatggc	atatnttact	tcccacaaaa	480

<210> 92

<211> 477

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (477)

<223> n = A,T,C or G

<400> 92

atacagccca	natcccacca	cgaagatgcg	cttggtgact	gagaacctga	tgcggtcact	60
gggtcccgctg	tagccccagc	gactctccac	ctgctggaag	cggttgatgc	tgcactcctt	120
cccacgcagg	cagcagcggg	gccggtcaat	gaactccact	cgtggcttgg	ggttgacggg	180
taantgcagg	aagaggctga	ccacctcgcg	gtccaccagg	atgcccgact	gtgcgggacc	240
tgcagcgaaa	ctcctcgatg	gtcatgagcg	ggaagcgaat	gangcccagg	gccttgccca	300
gaaccttccg	cctgttctct	ggcgtcacct	gcagctgctg	ccgctnacac	tcggcctcgg	360
accagcggac	aaacggcggt	gaacagccgc	acctcacgga	tgcccantgt	gtcgcgctcc	420
aggaacggcn	ccagcgtgtc	caggtcaatg	tcggtgaanc	ctccgcgggt	aatggcg	477

<210> 93

<211> 377

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (377)

<223> n = A,T,C or G

<400> 93

gaacggctgg	accttgccctc	gcattgtgct	gctggcagga	ataccttggc	aagcagctcc	60
agtccgagca	gccccagacc	gctgccgccc	gaagctaagc	ctgcctctgg	ccttccccctc	120
cgcctcaatg	cagaaccant	agtgggagca	ctgtgttttag	agttaagagt	gaacactgtg	180
tgattttact	tgggaatttc	ctctgttata	tagcttttcc	caatgcta	ttccaaacaa	240
caacaacaaa	ataacatggt	tgccgtttna	gttggtataaa	agtangtgat	tctgtatnta	300
aagaaaatat	tactgttaca	tatactgctt	gcaanttctg	tatttattgg	tnctctggaa	360
ataaatatat	tattaaa					377

<210> 94

<211> 495

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (495)

<223> n = A,T,C or G

<400> 94

ccctttgagg	ggttagggtc	cagttcccag	tggaagaaac	aggccaggag	aantgcgtgc	60
cgagctgang	cagatttccc	acagtgaccc	cagagccctg	ggctatagtc	tctgacctct	120
ccaaggaaaag	accaccttct	ggggacatgg	gctggagggc	aggacctaga	ggcaccaagg	180
gaaggcccca	ttccggggct	gttccccgag	gaggaaggga	aggggctctg	tgtgcccccc	240
acgaggaana	ggccctgant	cctgggatca	nacacccctt	cacgtgtatc	cccacacaaa	300
tgcaagctca	ccaagggtccc	ctctcagtc	cttccctaca	ccctgaacgc	ncactggccc	360
acacccaccc	agancancca	cccgccatgg	ggaatgtntc	caagggaatc	cngggcaacg	420
tggactctng	ttccnnaagg	gggcagaatc	tccaatagan	gganngaacc	cttgctnana	480

aaaaaaaaana aaaaaa

495

<210> 95
 <211> 472
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(472)
 <223> n = A,T,C or G

<400> 95
 ggttacttgg tttcattgcc accacttagt ggatgtcatt tagaaccatt ttgtctgctc 60
 cctctggaag ccttgcgcag agcggacttt gtaattgttg gagaataact gctgaatttt 120
 tagctgtttt gagttgattc gcaccactgc accacaactc aatatgaaaa ctatttnact 180
 tatttattat cttgtgaaaa gtatacaatg aaaattttgt tcatactgta tttatcaagt 240
 atgatgaaaa gcaatagata tatattcttt tattatgtn aattatgatt gccattatta 300
 atcggcaaaa tgtggagtgt atgttctttt cacagtaata tatgcctttt gtaacttcac 360
 ttggttattt tattgtaaat gaattacaaa attcttaatt taagaaaatg gtangttata 420
 ttanttcan taatttcttt ccttgtttac gtaattttg aaaagaatgc at 472

<210> 96
 <211> 476
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(476)
 <223> n = A,T,C or G

<400> 96
 ctgaagcatt tcttcaaact tntctacttt tgtcattgat acctgtagta agttgacaat 60
 gtggtgaaat ttcaaaatta tatgtaactt ctactagttt tactttctcc cccaagtctt 120
 ttttaactca tgattttttac acacacaatc cagaacttat tatatagcct ctaagtcttt 180
 attcttcaca gtagatgatg aaagagtcct ccagtgtctt gngcanaatg ttctagntat 240
 agctggatac atacngtggg agttctataa actcatacct cagtgggact naaccaaaat 300
 tgtgttagtc tcaattccta ccacactgag ggagcctccc aaatcactat attcttatct 360
 gcaggctact ctccagaaaa acngacaggg caggccttgca tgaaaaagtn acatctgcgt 420
 tacaaagtct atcttctca nangtctgtn aaggaacaat ttaatcttct agcttt 476

<210> 97
 <211> 479
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(479)
 <223> n = A,T,C or G

<400> 97
 actctttcta atgctgatat gatcttgagt ataagaatgc atatgtcact agaatggata 60
 aaataatgct gcaaacttaa tgttcttatg caaaatggaa cgctaataa acacagctta 120

caatcgcaaa	tcaaaactca	caagtgtctca	tctgtttag	atttagtgta	ataagactta	180
gattgtgtctc	cttcggatat	gattgtttct	canatcttgg	gcaatnttcc	ttagtcaaat	240
caggctacta	gaattctgtt	attggatatn	tgagagcatg	aaatttttaa	naatacactt	300
gtgattatna	aattaatcac	aaatttcact	tatacctgct	atcagcagct	agaaaaacat	360
ntnnttttta	natcaaagta	ttttgtgttt	ggaantgtnn	aaatgaaatc	tgaatgtggg	420
ttcnatctta	ttttttcccn	gacnactant	tnctttttta	gggnctattc	tganccatc	479

<210> 98

<211> 461

<212> DNA

<213> Homo sapien

<400> 98

agtgacttgt	cctccaacaa	aaccccttga	tcaagtttgt	ggcactgaca	atcagaccta	60
tgctagtcc	tgctatctat	tcgctactaa	atgcagactg	gaggggacca	aaaaggggca	120
tcaactccag	ctggattatt	ttggagcctg	caaatctatt	cctacttgta	cggactttga	180
agtgattcag	tttctctac	ggatgagaga	ctggctcaag	aatatcctca	tcgagcttta	240
tgaagccact	ctgaacacgc	tggttatcta	gatgagaaca	gagaaataaa	gtcagaaaaat	300
ttacctggag	aaaagaggct	ttggctgggg	accatcccat	tgaaccttct	cttaaggact	360
ttaagaaaaa	ctaccacatg	ttgtgtatcc	tggtgccggc	cgtttatgaa	ctgaccaccc	420
tttgaataaa	tcttgacgct	cctgaacttg	ctcctctgcg	a		461

<210> 99

<211> 171

<212> DNA

<213> Homo sapien

<400> 99

gtggccgctc	gcaggtgttt	cctcgtaccg	cagggccccc	tcctttcccc	aggcgtccct	60
cggcgccctc	gcgggcccga	ggaggagcgg	ctggcggggtg	gggggagtgt	gaccacccct	120
cggtgagaaa	agccttctct	agcgatctga	gaggcggtgcc	ttgggggtac	c	171

<210> 100

<211> 269

<212> DNA

<213> Homo sapien

<400> 100

cggccgcaag	tgcaactcca	gctggggccg	tgccgacgaa	gattctgccca	gcagttggct	60
cgactgacgac	gacggcggcg	gcgacagtcg	caggtgcagc	gcggggcgct	gggggtcttg	120
aaggctgagc	tgacgccgca	gaggtcgtgt	cacgtcccac	gaccttgacg	ccgtcgggga	180
cagccggaac	agagcccggg	gaagcgggag	gcctcgggga	gccccctcggg	aagggcggcc	240
cgagagatac	gcaggtgcag	gtggccgcc				269

<210> 101

<211> 405

<212> DNA

<213> Homo sapien

<400> 101

tttttttttt	ttttggaatc	tactgcgagc	acagcaggtc	agcaacaagt	ttattttgca	60
gctagcaagg	taacagggtg	gggcatgggt	acatgttcag	gtcaacttcc	tttgtcgtgg	120
ttgattgggt	tgtctttatg	ggggcggggg	ggggtagggg	aaacgaagca	aataacatgg	180
agtgggtgca	ccctccctgt	agaacctggg	tacaaagctt	ggggcagttc	acctggctcg	240
tgaccgtcat	tttcttgaca	tcaatgttat	tagaagtcag	gatattcttt	agagagtcca	300

ctgttctgga gggagattag ggtttcttgc caaatccaac aaaatccact gaaaaagttg 360
 gatgatcagt acgaataccg aggcatattc tcatatcggg ggcca 405

<210> 102
 <211> 470
 <212> DNA
 <213> Homo sapien

<400> 102
 tttttttttt tttttttttt tttttttttt tttttttttt tttttttttt tttttttttt 60
 ggcacttaat ccattttttat ttcaaaatgt ctacaaattt aatcccatta tacgggtattt 120
 tcaaaatcta aattattcaa attagccaaa tccttaccaa ataataccca aaaatcaaaa 180
 atatacttct ttcagcaaac ttgttacata aattaaaaaa atatatacgg ctggtgtttt 240
 caaagtacaa ttatcttaac actgcaaac ttttaaggaa ctaaaataaa aaaaaacact 300
 ccgcaaagggt taaagggaac aacaaattct tttacaacac cattataaaa atcatatctc 360
 aaatcttagg ggaatatata cttcacacgg gatcttaact tttactcact ttgtttattt 420
 ttttaaacca ttgtttgggc ccaacacaat ggaatcccc ctggactagt 470

<210> 103
 <211> 581
 <212> DNA
 <213> Homo sapien

<400> 103
 tttttttttt ttttttttga cccccctctt ataaaaaaca agttaccatt ttatttttact 60
 tacacatatt tattttataa ttggtattag atattcaaaa ggcagctttt aaaatcaaac 120
 taaatggaaa ctgccttaga tacataattc ttaggaatta gcttaaaatc tgcctaaagt 180
 gaaaatcttc tctagctctt ttgactgtaa atttttgact cttgtaaaac atccaaattc 240
 atttttcttg tctttaaaat tatctaattc ttccattttt tccctattcc aagtcaattt 300
 gcttctctag cctcatttcc tagctcttat ctactattag taagtggctt ttttcctaaa 360
 agggaaaaca ggaagagaaa tggcacacaa aacaaacatt ttatattcat atttctacct 420
 acgttaataa aatagcattt tgtgaagcca gctcaaaaga aggcttagat ccttttatgt 480
 ccatttttagt cactaaacga tatcaaagtg ccagaatgca aaagggttgt gaacatttat 540
 tcaaaagcta atataagata tttcacatac tcatctttct g 581

<210> 104
 <211> 578
 <212> DNA
 <213> Homo sapien

<400> 104
 tttttttttt tttttttttt tttttctctt cttttttttt gaaatgagga tctaggtttt 60
 cactctctag atagggcatg aagaaaactc atctttccag ctttaaaata acaatcaaat 120
 ctcttatgct atatcatatt ttaagttaaa ctaatgagtc actggcttat cttctcctga 180
 aggaaatctg ttcattcttc tcattcatat agttatatca agtactacct tgcattatga 240
 gaggtttttt ttctctattt acacatatat ttccatgtga atttgtatca aacctttatt 300
 ttcatgcaaa ctagaaaata atgtttcttt tgcataagag aagagaacaa tatagcatta 360
 caaaactgct caaattgttt gttaagttat ccattataat tagttggcag gagctaatac 420
 aaatcacatt tacgacagca ataataaaac tgaagtacca gttaaatatc caaaataatt 480
 aaaggaacat ttttagcctg ggtataatta gctaattcac tttacaagca tttattagaa 540
 tgaattcaca tggtattatt cctagcccaa cacaatgg 578

<210> 105
 <211> 538
 <212> DNA

<213> Homo sapien

<400> 105

tttttttttt	tttttcagta	ataatcagaa	caatatttat	ttttatattt	aaaattcata	60
gaaaagtgcc	ttacatttaa	taaaagtttg	tttctcaaag	tgatcagagg	aattagatat	120
gtcttgaaca	ccaatattaa	tttgaggaaa	atacaccaaa	atacattaag	taaattattt	180
aagatcatag	agcttgtaag	tgaaaagata	aaatttgacc	tcagaaactc	tgagcattaa	240
aaatccacta	ttagcaata	aattactatg	gacttcttgc	tttaattttg	tgatgaatat	300
ggggtgtcac	tggtaaacca	acacattctg	aaggatacat	tacttagtga	tagattctta	360
tgtactttgc	taatacgtgg	atatgagttg	acaagtttct	ctttcttcaa	tcttttaagg	420
ggcgagaaat	gaggaagaaa	agaaaaggat	tacgcatact	gttctttcta	tggaaggatt	480
agatatgttt	cctttgccaa	tattaaaaaa	ataataatgt	ttactactag	tgaaaccc	538

<210> 106

<211> 473

<212> DNA

<213> Homo sapien

<400> 106

tttttttttt	tttttttagtc	aagtttctat	ttttattata	attaaagtct	tggtcatttc	60
atttatttagc	tctgcaactt	acatatttaa	attaaagaaa	cgtttttagac	aactgtacaa	120
tttataaatg	taagggtgcca	ttattgagta	atatattcct	ccaagagtgg	atgtgtccct	180
tctcccacca	actaatgaac	agcaacatta	gtttaatttt	attagtagat	atacactgct	240
gcaaacgcta	attctcttct	ccatcccat	gtgatattgt	gtatatgtgt	gagttggtag	300
aatgcatacac	aactacaat	caacagcaag	atgaagctag	gctgggcttt	cggtgaaaat	360
agactgtgtc	tgtctgaatc	aaatgatctg	acctatcctc	ggtggcaaga	actcttcgaa	420
ccgcttctct	aaaggcgctg	ccacatttgt	ggctctttgc	acttgtttca	aaa	473

<210> 107

<211> 1621

<212> DNA

<213> Homo sapien

<400> 107

cgccatggca	ctgcagggca	tctcgggtcat	ggagctgtcc	ggcctggccc	cgggcccgtt	60
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ccgctacgac	gtgagccgct	tgggcccggg	caagcgctcg	ctagtgtctg	acctgaagca	180
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a 1621

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<210> 108

<211> 382

<212> PRT

<213> Homo sapien

<400> 108

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20 25 30
Arg Val Asp Arg Pro Gly Ser Arg Tyr Asp Val Ser Arg Leu Gly Arg
35 40 45
Gly Lys Arg Ser Leu Val Leu Asp Leu Lys Gln Pro Arg Gly Ala Ala
50 55 60
Val Leu Arg Arg Leu Cys Lys Arg Ser Asp Val Leu Leu Glu Pro Phe
65 70 75 80
Arg Arg Gly Val Met Glu Lys Leu Gln Leu Gly Pro Glu Ile Leu Gln
85 90 95
Arg Glu Asn Pro Arg Leu Ile Tyr Ala Arg Leu Ser Gly Phe Gly Gln
100 105 110
Ser Gly Ser Phe Cys Arg Leu Ala Gly His Asp Ile Asn Tyr Leu Ala
115 120 125
Leu Ser Gly Val Leu Ser Lys Ile Gly Arg Ser Gly Glu Asn Pro Tyr
130 135 140
Ala Pro Leu Asn Leu Leu Ala Asp Phe Ala Gly Gly Gly Leu Met Cys
145 150 155 160
Ala Leu Gly Ile Ile Met Ala Leu Phe Asp Arg Thr Arg Thr Asp Lys
165 170 175
Gly Gln Val Ile Asp Ala Asn Met Val Glu Gly Thr Ala Tyr Leu Ser
180 185 190
Ser Phe Leu Trp Lys Thr Gln Lys Ser Ser Leu Trp Glu Ala Pro Arg
195 200 205
Gly Gln Asn Met Leu Asp Gly Gly Ala Pro Phe Tyr Thr Thr Tyr Arg
210 215 220
Thr Ala Asp Gly Glu Phe Met Ala Val Gly Ala Ile Glu Pro Gln Phe
225 230 235 240
Tyr Glu Leu Leu Ile Lys Gly Leu Gly Leu Lys Ser Asp Glu Leu Pro
245 250 255
Asn Gln Met Ser Met Asp Asp Trp Pro Glu Met Lys Lys Lys Phe Ala
260 265 270
Asp Val Phe Ala Lys Lys Thr Lys Ala Glu Trp Cys Gln Ile Phe Asp
275 280 285
Gly Thr Asp Ala Cys Val Thr Pro Val Leu Thr Phe Glu Glu Val Val
290 295 300
His His Asp His Asn Lys Glu Arg Gly Ser Phe Ile Thr Ser Glu Glu
305 310 315 320
Gln Asp Val Ser Pro Arg Pro Ala Pro Leu Leu Leu Asn Thr Pro Ala

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<210> 109
<211> 1524
<212> DNA
<213> Homo sapien
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<400> 109

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<210> 110
<211> 3410
<212> DNA
<213> Homo sapien
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$\langle 400 \rangle$ 110

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<210> 111

<211> 1289

<212> DNA

<213> Homo sapien

<400> 111

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tgttacaatg	ttaaaaaaaa	aaaaaaaaa				1289

<210> 112

<211> 315

<212> PRT

<213> Homo sapien

<400> 112

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			20					25					30		
Phe	Phe	Leu	Phe	Phe	Leu	Gly	Val	Trp	Leu	Val	Ala	Tyr	Gly	Val	Ala
		35				40						45			
Thr	Glu	Gly	Leu	Leu	Arg	Pro	Arg	Asp	Ser	Asp	Phe	Pro	Ser	Ile	Leu
	50				55					60					
Arg	Arg	Val	Phe	Tyr	Arg	Pro	Tyr	Leu	Gln	Ile	Phe	Gly	Gln	Ile	Pro
65					70					75				80	
Gln	Glu	Asp	Met	Asp	Val	Ala	Leu	Met	Glu	His	Ser	Asn	Cys	Ser	Ser
			85						90					95	
Glu	Pro	Gly	Phe	Trp	Ala	His	Pro	Pro	Gly	Ala	Gln	Ala	Gly	Thr	Cys
			100					105					110		
Val	Ser	Gln	Tyr	Ala	Asn	Trp	Leu	Val	Val	Leu	Leu	Leu	Val	Ile	Phe
		115					120					125			
Leu	Leu	Val	Ala	Asn	Ile	Leu	Leu	Val	Asn	Leu	Leu	Ile	Ala	Met	Phe
		130					135					140			
Ser	Tyr	Thr	Phe	Gly	Lys	Val	Gln	Gly	Asn	Ser	Asp	Leu	Tyr	Trp	Lys
145					150					155					160
Ala	Gln	Arg	Tyr	Arg	Leu	Ile	Arg	Glu	Phe	His	Ser	Arg	Pro	Ala	Leu
			165						170					175	
Ala	Pro	Pro	Phe	Ile	Val	Ile	Ser	His	Leu	Arg	Leu	Leu	Leu	Arg	Gln
			180					185					190		
Leu	Cys	Arg	Arg	Pro	Arg	Ser	Pro	Gln	Pro	Ser	Ser	Pro	Ala	Leu	Glu

195 200 205
 His Phe Arg Val Tyr Leu Ser Lys Glu Ala Glu Arg Lys Leu Leu Thr
 210 215 220
 Trp Glu Ser Val His Lys Glu Asn Phe Leu Leu Ala Arg Ala Arg Asp
 225 230 235 240
 Lys Arg Glu Ser Asp Ser Glu Arg Leu Lys Arg Thr Ser Gln Lys Val
 245 250 255
 Asp Leu Ala Leu Lys Gln Leu Gly His Ile Arg Glu Tyr Glu Gln Arg
 260 265 270
 Leu Lys Val Leu Glu Arg Glu Val Gln Gln Cys Ser Arg Val Leu Gly
 275 280 285
 Trp Val Ala Glu Ala Leu Ser Arg Ser Ala Leu Leu Pro Pro Gly Gly
 290 295 300
 Pro Pro Pro Pro Asp Leu Pro Gly Ser Lys Asp
 305 310 315

<210> 113
 <211> 553
 <212> PRT
 <213> Homo sapien

<400> 113
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 35 40 45
 Glu Glu Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly
 50 55 60
 Leu Val Cys Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly
 65 70 75 80
 Arg Tyr Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile
 85 90 95
 Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu
 100 105 110
 Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly
 115 120 125
 Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu
 130 135 140
 Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala
 145 150 155 160
 Tyr Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr
 165 170 175
 Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu
 180 185 190
 Gly Thr Gln Glu Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu
 195 200 205
 Thr Cys Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Ala Leu Gly
 210 215 220
 Pro Thr Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Ser Pro His
 225 230 235 240
 Cys Cys Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu
 245 250 255
 Leu Pro Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg

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                260                265                270
Arg Leu Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe
                275                280                285
Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val
                290                295                300
Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
305                310                315                320
Val Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu
                325                330                335
Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg
                340                345                350
Ala Val Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala
                355                360                365
Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
                370                375                380
Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala
385                390                395                400
Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly
                405                410                415
Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu
                420                425                430
Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala
                435                440                445
Gly Gly Ser Gly Leu Leu Pro Pro Pro Pro Ala Leu Cys Gly Ala Ser
                450                455                460
Ala Cys Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala
465                470                475                480
Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
                485                490                495
Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser
                500                505                510
Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala
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Lys Ser Asp Leu Ala Lys Tyr Ser Ala
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<210> 114
<211> 241
<212> PRT
<213> Homo sapien

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<400> 114
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20          25          30
Ser Ile Asp Gly Ala Ser Phe Leu Lys Ile Phe Gly Pro Leu Ser Ser
35          40          45
Ser Ala Met Gln Phe Val Asn Val Gly Tyr Phe Leu Ile Ala Ala Gly
50          55          60
Val Val Val Phe Ala Leu Gly Phe Leu Gly Cys Tyr Gly Ala Lys Thr
65          70          75          80
Glu Ser Lys Cys Ala Leu Val Thr Phe Phe Phe Ile Leu Leu Leu Ile

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				85					90					95					
Phe	Ile	Ala	Glu	Val	Ala	Ala	Ala	Val	Val	Ala	Leu	Val	Tyr	Thr	Thr				
			100					105					110						
Met	Ala	Glu	His	Phe	Leu	Thr	Leu	Leu	Val	Val	Pro	Ala	Ile	Lys	Lys				
			115				120					125							
Asp	Tyr	Gly	Ser	Gln	Glu	Asp	Phe	Thr	Gln	Val	Trp	Asn	Thr	Thr	Met				
			130			135					140								
Lys	Gly	Leu	Lys	Cys	Cys	Gly	Phe	Thr	Asn	Tyr	Thr	Asp	Phe	Glu	Asp				
145				150						155					160				
Ser	Pro	Tyr	Phe	Lys	Glu	Asn	Ser	Ala	Phe	Pro	Pro	Phe	Cys	Cys	Asn				
				165				170						175					
Asp	Asn	Val	Thr	Asn	Thr	Ala	Asn	Glu	Thr	Cys	Thr	Lys	Gln	Lys	Ala				
			180					185					190						
His	Asp	Gln	Lys	Val	Glu	Gly	Cys	Phe	Asn	Gln	Leu	Leu	Tyr	Asp	Ile				
			195				200					205							
Arg	Thr	Asn	Ala	Val	Thr	Val	Gly	Gly	Val	Ala	Ala	Gly	Ile	Gly	Gly				
210						215					220								
Leu	Glu	Leu	Ala	Ala	Met	Ile	Val	Ser	Met	Tyr	Leu	Tyr	Cys	Asn	Leu				
225					230					235					240				
Gln																			

<210> 115
 <211> 366
 <212> DNA
 <213> Homo sapien

<400> 115
 gctctttctc tcccctcctc tgaatttaat tctttcaact tgcaatttgc aaggattaca 60
 catttcactg tgatgtatat tgtgttgcaa aaaaaaaaaa gtgtctttgt ttaaaattac 120
 ttggtttgtg aatccatctt gctttttccc cattggaact agtcattaac ccatctctga 180
 actggtagaa aaacatctga agagctagtc tatcagcatc tgacaggtga attggatggt 240
 tctcagaacc atttcaccca gacagcctgt ttctatcctg ttttaataaat tagtttgggt 300
 tctctacatg cataacaaac cctgctccaa tctgtcacat aaaagtctgt gacttgaagt 360
 ttagtc 366

<210> 116
 <211> 282
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (282)
 <223> n = A,T,C or G

<400> 116
 acaaagatga accatttctt atattatagc aaaattaaaa tctaccctga ttctaattatt 60
 gagaaatgag atnaaacaca atnttataaa gtctacttag agaagatcaa gtgacctcaa 120
 agactttact attttcatat ttaagacac atgatttata ctatttttagt aacctgggtc 180
 atacgttaaa caaaggataa tgtgaacagc agagaggatt tgttggcaga aaatctatgt 240
 tcaatctnga actatctana tcacagacat ttctatttctt tt 282

<210> 117
 <211> 305

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (305)
<223> n = A,T,C or G

<400> 117
acacatgtcg cttcactgcc ttcttagatg cttctgggtca acatanagga acagggacca 60
tatttatcct ccctcctgaa acaattgcaa aataanacaa aatatatgaa acaattgcaa 120
aataaggcaa aatatatgaa acaacagggtc tgcgatatatt ggaaatcagt caatgaagga 180
tactgatccc tgatcactgt cctaattgcag gatgtgggaa acagatgagg tcacctctgt 240
gactgccccca gcttactgcc tgtagagagt ttctangctg cagttcagac agggagaaat 300
tgggt 305

<210> 118
<211> 71
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (71)
<223> n = A,T,C or G

<400> 118
accaaggtgt ntgaatctct gacgtgggga tctctgattc ccgcacaatc tgagtggaaa 60
aantcctggg t 71

<210> 119
<211> 212
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (212)
<223> n = A,T,C or G

<400> 119
actccggttg gtgtcagcag cacgtggcat tgaacatngc aatgtggagc ccaaaccaca 60
gaaaatgggg tgaaattggc caactttcta tnaacttatg ttggcaantt tgccaccaac 120
agtaagctgg cctttctaataaaaagaaaat tgaaagggtt ctcactaanc ggaattaant 180
aatggantca aganactccc aggcctcagc gt 212

<210> 120
<211> 90
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (90)
<223> n = A,T,C or G

<400> 120

```

actcgttgca natcaggggc cccccagagt caccgttgca ggagtccttc tgggtcttgcc    60
ctccgccggc gcagaacatg ctgggggtgtg                                     90

```

<210> 121

<211> 218

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(218)

<223> n = A,T,C or G

<400> 121

```

tgtancgtga anacgacaga naggggtgtc aaaaatggag aanccttgaa gtcattttga    60
gaataagatt tgctaaaaga ttgggggcta aaacatgggt attgggagac atttctgaag    120
atatncangt aaattangga atgaattcat gggtctttttt ggaattcctt tacgatngcc    180
agcatanact tcatgtgggg atancagcta cccttgta                             218

```

<210> 122

<211> 171

<212> DNA

<213> Homo sapien

<400> 122

```

taggggtgta tgcaactgta aggacaaaaa ttgagactca actggcttaa ccaataaaagg    60
catttgtagt ctcatggaac aggaagtcgg atgggtggggc atcttcagtg ctgcatgagt    120
caccaccccg gcgggggtcat ctgtgccaca ggtccctgtt gacagtgcgg t           171

```

<210> 123

<211> 76

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(76)

<223> n = A,T,C or G

<400> 123

```

tgtagcgtga agacnacaga atgggtgtgtg ctgtgctatc caggaacaca tttattatca    60
ttatcaanta ttgtgtg                                           76

```

<210> 124

<211> 131

<212> DNA

<213> Homo sapien

<400> 124

```

acctttcccc aaggccaatg tcctgtgtgc taactggccg gctgcaggac agctgcaatt    60
caatgtgctg ggtcatatgg aggggaggag actctaaaaa agccaatttt atttctctgg    120
ttaagatttg t                                           131

```

<210> 125
<211> 432
<212> DNA
<213> Homo sapien

<400> 125
actttatcta ctggctatga aatagatggt ggaaaattgc gttaccaact ataccactgg 60
cttgaaaaag aggtgatagc tcttcagagg acttgtgact tttgctcaga tgctgaagaa 120
ctacagtctg catttggcag aaatgaagat gaatttggat taaatgagga tgctgaagat 180
ttgcctcacc aaacaaaagt gaaacaactg agagaaaatt ttcaggaaaa aagacagtgg 240
ctcttgaagt atcagtcact tttgagaatg tttcttagtt actgcatact tcatggatcc 300
catggtgggg gtccttgcac tgtaagaatg gaattgattt tgcttttgca agaattctcag 360
caggaaacat cagaaccact attttctagc cctctgtcag agcaaacctc agtgccctctc 420
ctcttttgctt gt 432

<210> 126
<211> 112
<212> DNA
<213> Homo sapien

<400> 126
acacaacttg aatagtaaaa tagaaactga gctgaaattt ctaattcact ttctaaccat 60
agtaagaatg atatttcccc ccagggatca ccaaatattt ataaaaattt gt 112

<210> 127
<211> 54
<212> DNA
<213> Homo sapien

<400> 127
accacgaaac cacaacaag atggaagcat caatccactt gccaaagcaca gcag 54

<210> 128
<211> 323
<212> DNA
<213> Homo sapien

<400> 128
acctcattag taattgtttt gttgtttcat ttttttctaa tgtctccctt ctaccagctc 60
acctgagata acagaatgaa aatggaagga cagccagatt tctcctttgc tctctgctca 120
ttctctctga agtctaggtt acccattttg gggaccatt ataggcaata aacacagttc 180
ccaaagcatt tggacagttt cttgttgtgt tttagaatgg ttttcctttt tcttagcctt 240
ttcctgcaaa aggtcactc agtccttgc ttgctcagtg gactgggctc cccagggcct 300
aggctgcctt cttttccatg tcc 323

<210> 129
<211> 192
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (192)
<223> n = A,T,C or G

<400> 129

```

acatacatgt gtgtatatatt ttaaatatca cttttgtatc actctgactt tttagcatac      60
tgaaaacaca ctaacataat ttntgtgaac catgatcaga tacaacccaa atcattcatc      120
tagcacattc atctgtgata naaagatagg tgagtttcat ttccttcacg ttggccaatg      180
gataaacaaa gt                                     192

```

<210> 130

<211> 362

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (362)

<223> n = A,T,C or G

<400> 130

```

ccctttttta tggaatgagt agactgtatg tttgaanatt tanccacaac ctctttgaca      60
tataatgacg caacaaaaaag gtgctgttta gtcctatggg tcagtttatg cccctgacaa      120
gtttccattg tgttttgccg atcttctggc taatcgtggg atcctccatg ttattagtaa      180
ttctgtattc ctttttgta acgcctggta gatgtaacct gctangaggc taactttata      240
cttattttaa agctcttatt ttgtgggtcat taaaatggca atttatgtgc agcactttat      300
tgcagcagga agcacgtgtg gggttggtgt aaagctcttt gctaattcta aaaagtaatg      360
gg                                     362

```

<210> 131

<211> 332

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (332)

<223> n = A,T,C or G

<400> 131

```

ctttttgaaa gatcgtgtcc actcctgtgg acatcttggt ttaatggagt ttcccatgca      60
gtangactgg tatggttgca gctgtccaga taaaaacatt tgaagagctc caaaatgaga      120
gttctcccag gttcgccctg ctgctccaag tctcagcagc agcctctttt aggaggcatc      180
ttctgaacta gattaaggca gcttgtaa atgatgtgat ttggtttatt atccaactaa      240
cttccatctg ttatcactgg agaaagccca gactccccan gacnggtacg gattgtgggc      300
atanaaggat tgggtgaagc tggcgttgtg gt                                     332

```

<210> 132

<211> 322

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (322)

<223> n = A,T,C or G

<400> 132

```

acttttgcca ttttgtatat ataaacaatc ttgggacatt ctctgaaaa ctaggtgtcc      60

```

```

agtggtctaag agaactcgat ttcaagcaat tctgaaagga aaaccagcat gacacagaat 120
ctcaaattcc caaacagggg ctctgtggga aaaatgaggg aggaccttg tatctcgggt 180
tttagcaagt taaaatgaan atgacaggaa aggcttattt atcaacaaag agaagagttg 240
ggatgcttct aaaaaaaact ttggtagaga aaataggaat gctnaatcct agggaagcct 300
gtaacaatct acaattgggtc ca 322

```

```

<210> 133
<211> 278
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (278)
<223> n = A,T,C or G

```

```

<400> 133
acaagccttc acaagtttaa ctaaattggg attaatcttt ctgtanttat ctgcataatt 60
cttggttttc tttccatctg gctcctgggt tgacaatttg tggaaacaac tctattgcta 120
ctatttaaaa aaaatcacaa atctttccct ttaagctatg ttnaattcaa actattcctg 180
ctattcctgt tttgtcaaag aaattatatt tttcaaaaata tgtntatttg tttgatgggt 240
cccacgaaac actaataaaa accacagaga ccagcctg 278

```

```

<210> 134
<211> 121
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (121)
<223> n = A,T,C or G

```

```

<400> 134
gtttanaaaa cttgttttagc tccatagagg aaagaatggt aaactttgta ttttaaaaca 60
tgattctctg aggttaaact tggttttcaa atgttatatt tacttgatt ttgcttttgg 120
t 121

```

```

<210> 135
<211> 350
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (350)
<223> n = A,T,C or G

```

```

<400> 135
acttanaacc atgcctagca catcagaatc cctcaaagaa catcagtata atcctataacc 60
atancaagtg gtgactgggt aagcgtgcga caaagggtcag ctggcacatt acttgtgtgc 120
aaacttgata cttttgttct aagtaggaac tagtatacag tncctaggan tggtagtcca 180
gggtgcccc caactcctgc agccgctcct ctgtgccagn ccctgnaagg aactttcgct 240
ccacctcaat caagccctgg gccatgctac ctgcaattgg ctgaacaaac gtttgctgag 300
ttcccaagga tgcaaagcct ggtgctcaac tcctggggcg tcaactcagt 350

```

<210> 136
 <211> 399
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(399)
 <223> n = A,T,C or G

<400> 136
 tgtaccgtga agacgacaga agttgcatgg cagggacagg gcagggccga ggccagggtt 60
 gctgtgattg tatccgaata ntccctcgtga gaaaagataa tgagatgacg tgagcagcct 120
 gcagacttgt gtctgccttc aanaagccag acaggaaggc cctgcctgcc ttggctctga 180
 cctggcgggc agccagccag ccacagggtg gcttcttctt tttgtggtga caacnccaag 240
 aaaactgcag aggcccaggg tcagggtgtna gtgggtangt gaccataaaa caccagggtgc 300
 tcccaggaac ccgggcaaag gccatcccca cctacagcca gcatgcccac tggcgtgatg 360
 ggtgcagang gatgaagcag ccagntgttc tgctgtggt 399

<210> 137
 <211> 165
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(165)
 <223> n = A,T,C or G

<400> 137
 actggtgtgg tngggggtga tgctggtggt anaagttgan gtgacttcan gatggtgtgt 60
 ggaggaagtg tgtgaacgta gggatgtaga ngttttggcc gtgctaaatg agcttcggga 120
 ttggctggtc ccaactggtg tcaactgtcat tgggtggggtt cctgt 165

<210> 138
 <211> 338
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(338)
 <223> n = A,T,C or G

<400> 138
 actcactgga atgccacatt cacaacagaa tcagagggtct gtgaaaacat taatggctcc 60
 ttaacttctc cagtaagaat cagggacttg aaatggaaac gttaacagcc acatgcccaa 120
 tgctgggcag tctcccatgc cttccacagt gaaagggctt gagaaaaatc acatccaatg 180
 tcatgtgttt ccagccacac caaaagggtgc ttgggggtgga gggctggggg catananggt 240
 cangcctcag gaagcctcaa gttccattca gctttgccac tgtacattcc ccatntttaa 300
 aaaaactgat gccttttttt tttttttttg taaaattc 338

<210> 139
 <211> 382

<212> DNA

<213> Homo sapien

<400> 139

gggaatcttg	gtttttggca	tctggtttgc	ctatagccga	ggccactttg	acagaacaaa	60
gaaagggact	tcgagtaaga	aggtgattta	cagccagcct	agtgcccga	gtgaaggaga	120
attcaaacag	acctcgtcat	tcctgggtg	agcctggtcg	gtcaccgcc	tatcatctgc	180
atttgctta	ctcaggtgct	accggactct	ggccccgat	gtctgtagtt	tcacaggatg	240
ccttatttgt	cttctacacc	ccacagggcc	ccctacttct	tcggatgtgt	ttttaataat	300
gtcagctatg	tgccccatcc	tccttcatgc	cctccctccc	tttcctacca	ctgctgagtg	360
gcctgggaact	tgtttaaagt	gt				382

<210> 140

<211> 200

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (200)

<223> n = A,T,C or G

<400> 140

accaaanctt	ctttctgttg	tgtnngattt	tactataggg	gttnngcttn	ttctaaanat	60
acttttcatt	taacancctt	tgtaagtgt	caggctgcac	tttgctccat	anaattattg	120
ttttcacatt	tcaacttgta	tgtgtttgtc	tcttanagca	ttggtgaaat	cacatatttt	180
atattcagca	taaaggagaa					200

<210> 141

<211> 335

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (335)

<223> n = A,T,C or G

<400> 141

actttatttt	caaaacactc	atatgttgca	aaaaacacat	agaaaaataa	agtttggtgg	60
gggtgctgac	taaacttcaa	gtcacagact	tttatgtgac	agattggagc	agggtttgtt	120
atgcatgtag	agaacccaaa	ctaatttatt	aaacaggata	gaaacaggct	gtctgggtga	180
aatggttctg	agaaccatcc	aattcacctg	tcagatgctg	atanactagc	tcttcagatg	240
tttttctacc	agttcagaga	tnggttaatg	actanttcca	atggggaaaa	agcaagatgg	300
attcacaac	caagtaattt	taaacaaaga	cactt			335

<210> 142

<211> 459

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (459)

<223> n = A,T,C or G

<400> 142

accagggttaa	tattgccaca	tatatccttt	ccaattgcgg	gctaaacaga	cgtgtattta	60
gggttggtta	aagacaaccc	agcttaatat	caagagaaat	tgtgaccttt	catggagtat	120
ctgatggaga	aaacactgag	ttttgacaaa	tcttatttta	ttcagatagc	agtctgatca	180
cacatgggtcc	aacaacactc	aaataataaa	tcaaatatna	tcagatgtta	aagattgggtc	240
ttcaaacatc	atagccaatg	atgccccgct	tgcctataat	ctctccgaca	taaaaccaca	300
tcaacacctc	agtggccacc	aaaccattca	gcacagcttc	cttaactgtg	agctgtttga	360
agctaccagt	ctgagcacta	ttgactatnt	ttttcangct	ctgaatagct	ctagggatct	420
cagcanggggt	gggaggaacc	agctcaacct	tggcgtant			459

<210> 143

<211> 140

<212> DNA

<213> Homo sapien

<400> 143

acatttcctt	ccaccaagtc	aggactcctg	gcttctgtgg	gagttcttat	cacctgaggg	60
aaatccaaac	agtctctcct	agaaaggaat	agtgtcacca	acccaccca	tctcctgag	120
accatccgac	tccctgtgt					140

<210> 144

<211> 164

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (164)

<223> n = A,T,C or G

<400> 144

acttcagtaa	caacatacaa	taacaacatt	aagtgtatat	tgccatcttt	gtcattttct	60
atctatacca	ctctcccttc	tgaaaacaan	aatcactanc	caatcactta	tacaaatttg	120
aggcaattaa	tccatatttg	ttttcaataa	ggaaaaaaag	atgt		164

<210> 145

<211> 303

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (303)

<223> n = A,T,C or G

<400> 145

acgtagacca	tccaactttg	tatttgtaat	ggcaaacatc	cagnagcaat	tcctaaacaa	60
actggagggt	atttataccc	aattatccca	ttcattaaca	tgccctcctc	ctcagggtat	120
gcaggacagc	tatcataagt	cggcccaggc	atccagatac	taccatttgt	ataaacttca	180
gtagggggagt	ccatccaagt	gacaggtcta	atcaaaggag	gaaatggaac	ataagcccag	240
tagtaaaatn	ttgcttagct	gaaacagcca	caaaagactt	accgccgtgg	tgattaccat	300
caa						303

<210> 146

<211> 327
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(327)
 <223> n = A,T,C or G

<400> 146

actgcagctc aattagaagt ggtctctgac tttcatcanc ttctccctgg gctccatgac	60
actggcctgg agtgactcat tgctctgggt ggttgagaga gctcctttgc caacaggcct	120
ccaagtcagg gctgggattt gtttcctttc cacattctag caacaatatg ctggccactt	180
cctgaacagg gaggggtggga ggagccagca tgggaacaagc tgccactttc taaagtagcc	240
agacttgccc ctgggcctgt cacacctact gatgaccttc tgtgcctgca ggatggaatg	300
taggggtgag ctgtgtgact ctatgggt	327

<210> 147
 <211> 173
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(173)
 <223> n = A,T,C or G

<400> 147

acattgtttt tttgagataa agcattgana gagctctcct taacgtgaca caatggaagg	60
actggaacac ataccacat ctttgttctg agggataatt ttctgataaa gtcttgctgt	120
atattcaagc acatatgtta tatattattc agttccatgt ttatagccta gtt	173

<210> 148
 <211> 477
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(477)
 <223> n = A,T,C or G

<400> 148

acaaccactt tatctcatcg aatttttaac ccaaactcac tcactgtgcc tttctatcct	60
atgggatata ttatttgatg ctccatttca tcacacatat atgaataata cactcatact	120
gccctactac ctgctgcaat aatcacattc ccttcctgtc ctgaccctga agccattggg	180
gtggctctag tggccatcag tccangcctg caccttgagc ccttgagctc cattgtcac	240
nccanccac ctcaccgacc ccatcctctt acacagctac ctccctgctc tctaacccca	300
tagattatnt ccaaattcag tcaattaagt tactattaac actctaccg acatgtccag	360
caccactggg aagccttctc cagccaacac acacacacac acacncacac acacacatat	420
ccaggcacag gctacctcat cttcacaatc acccctttaa ttaccatgct atgggtgg	477

<210> 149
 <211> 207
 <212> DNA

<213> Homo sapien

<400> 149

acagttgtat tataatatca agaaataaac ttgcaatgag agcattttaag agggaagaac	60
taacgtatatt tagagagcca aggaagggtt ctgtggggag tgggatgtaa ggtggggcct	120
gatgataaat aagagtcagc caggaagtg ggtggtgtgg tatgggcaca gtgaagaaca	180
tttcaggcag agggaacagc agtgaaa	207

<210> 150

<211> 111

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(111)

<223> n = A,T,C or G

<400> 150

accttgatatt cattgctgct ctgatggaaa cccaactatc taatttagct aaaacatggg	60
cacttaaattg tggtcagtgt ttggacttgt taactantgg catctttggg t	111

<210> 151

<211> 196

<212> DNA

<213> Homo sapien

<400> 151

agcgcggcag gtcattattga acattccaga tacctatcat tactcgatgc tgttgataac	60
agcaagatgg ctttgaactc agggtcacca ccagctattg gaccttacta tgaaaaccat	120
ggataccaac cggaaaaccc ctatccccgca cagcccaactg tggccccac tgtctacgag	180
gtgcatccgg ctacgt	196

<210> 152

<211> 132

<212> DNA

<213> Homo sapien

<400> 152

acagcacttt cacatgtaag aaggagagaaa ttccataatg taggagaaaag ataacagAAC	60
cttccccttt tcatctagtgt gtggaaacct gatgctttat gttgacagga atagaaccag	120
gaggagatgt gt	132

<210> 153

<211> 285

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(285)

<223> n = A,T,C or G

<400> 153

acaanaccca nganaggcca ctggccgtgg tgtcatggcc tccaaacatg aaagtgtcag	60
---	----

```

cttctgctct tatgtcctca tctgacaact ctttaccatt tttatcctcg ctcagcagga      120
gcacatcaat aaagtccaaa gtcttggaact tggccttggc ttggaggaag tcatcaacac      180
cctggctagt gaggggtgcg cgccgtcctt ggatgacggc atctgtgaag tcgtgcacca      240
gtctgcaggc cctgtggaag cgccgtccac acggagtnag gaatt                        285

```

```

<210> 154
<211> 333
<212> DNA
<213> Homo sapien

```

```

<400> 154
accacagtcc tgttggggcca gggcttcatg accctttctg tgaaaagcca tattatcacc      60
accccaaatt tttccttaaa tatctttaac tgaaggggtc agcctcttga ctgcaaagac      120
cctaagccgg ttacacagct aactcccact ggccctgatt tgtgaaattg ctgctgcctg      180
attggcacag gagtcgaagg tgttcagctc ccctcctcgg tggaaacgaga ctctgatttg      240
agtttcacaa attctcgggc cacctcgtca ttgctcctct gaaataaaat ccggagaatg      300
gtcaggcctg tctcatccat atggatcttc cgg                                333

```

```

<210> 155
<211> 308
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(308)
<223> n = A,T,C or G

```

```

<400> 155
actggaaata ataaaaccca catcacagtg ttgtgtcaaa gatcatcagg gcatggatgg      60
gaaagtgctt tgggaactgt aaagtgccta acacatgata gatgattttt gttataatat      120
ttgaatcacg gtgcatacaa actctcctgc ctgctcctcc tgggccccag cccagcccc      180
atcacagctc actgctctgt tcatccaggc ccagcatgta gtggctgatt cttcttggct      240
gcttttagcc tccanaagtt tctctgaagc caaccaaacc tctangtgta aggcattgctg      300
gccttggt                                308

```

```

<210> 156
<211> 295
<212> DNA
<213> Homo sapien

```

```

<400> 156
accttgctcg gtgcttggaa catattagga actcaaaata tgagatgata acagtgccta      60
ttattgatta ctgagagaac tgtagacat ttagttgaag attttctaca caggaactga      120
gaataggaga ttatgtttgg cctcatatt ctctcctatc ctcccttgct cattctatgt      180
ctaatatatt ctcaatcaaa taaggtttagc ataatcagga aatcgaccaa ataccaatat      240
aaaaccagat gtctatcctt aagattttca aatagaaaac aaattaacag actat          295

```

```

<210> 157
<211> 126
<212> DNA
<213> Homo sapien

```

```

<400> 157
acaagtttaa atagtgtgt cactgtgcat gtgctgaaat gtgaaatcca ccacatttct      60

```

gaagagcaaa acaaattctg tcatgtaatc tctatcttgg gtcgtgggta tatctgtccc 120
cttagt 126

<210> 158
<211> 442
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (442)
<223> n = A,T,C or G

<400> 158
accactggt cttggaaaca cccatcctta atacgatgat ttttctgtcg tgtgaaaatg 60
aanccagcag gctgccccta gtcagtcctt ccttccagag aaaaagagat ttgagaaagt 120
gcctgggtaa ttcaccatta atttcctccc ccaaactctc tgagtcttcc cttaatatatt 180
ctggtgggtc tgaccaaagc aggtcatggt ttgttgagca tttgggatcc cagtgaagta 240
natgtttgta gccttgcata cttagccctt cccacgcaca aacggagtgg cagagtgggtg 300
ccaaccctgt tttcccagtc cacgtagaca gattcacagt gcggaattct ggaagctgga 360
nacagacggg ctctttgcag agccgggact ctgagangga catgagggcc tctgcctctg 420
tgttcattct ctgatgtcct gt 442

<210> 159
<211> 498
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (498)
<223> n = A,T,C or G

<400> 159
acttccaggt aacgttggtg tttccgttga gcctgaactg atgggtgacg ttgtaggttc 60
tccaacaaga actgaggttg cagagcgggt aggggaagagt gctgttccag ttgcacctgg 120
gctgctgtgg actgttggtg attcctcact acggcccaag gttgtggaac tggcanaaag 180
gtgtgtgtgt gganttgagc tcgggcgggt gtggttaggtt gtgggtctct caacaggggc 240
tgctgtgggt ccgggangtg aangtggtgt gtcacttgag cttggccagc tctggaaagt 300
antanattct tcctgaaggc cagcgcttgt ggagctggca ngggtcantg ttgtgtgtaa 360
cgaaccagtg ctgctgtggg tgggtgtana tcctccacaa agcctgaagt tatggtgtcn 420
tcaggttaana atgtggtttc agtgtccctg ggcngctgtg gaaggttgta nattgtcacc 480
aagggaataa gctgtggt 498

<210> 160
<211> 380
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (380)
<223> n = A,T,C or G

<400> 160

```

acctgcatcc agcttccctg ccaaactcac aaggagacat caacctctag acagggaaac      60
agcttcagga tacttccagg agacagagcc accagcagca aaacaaatat tcccatgcct      120
ggagcatggc atagaggaag ctganaaatg tggggctctga ggaagccatt tgagtctggc      180
cactagacat ctcatcagcc acttgtgtga agagatgccc catgacccca gatgcctctc      240
ccacccttac ctccatctca cacacttgag ctttccactc tgtataattc taacatcctg      300
gagaaaaatg gcagtttgac cgaacctgtt cacaacggta gaggctgatt tctaacgaaa      360
ctgtagaat  gaagcctgga                                     380

```

```

<210> 161
<211> 114
<212> DNA
<213> Homo sapien

```

```

<400> 161
actccacatc cctctgagc aggcgggtgt cgttcaaggt gtatttgccc ttgcctgtca      60
cactgtccac tggccctta tccacttggt gcttaatccc tcgaaagagc atgt          114

```

```

<210> 162
<211> 177
<212> DNA
<213> Homo sapien

```

```

<400> 162
actttctgaa tcgaatcaaa tgatacttag tgtagtttta atatcctcat atatatcaaa      60
gttttactac tctgataatt ttgtaaacca ggtaaccaga acatccagtc atacagcttt      120
tggtgatata taacttggca ataaccagtc ctggtgatac ataaaactac tcactgt       177

```

```

<210> 163
<211> 137
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(137)
<223> n = A,T,C or G

```

```

<400> 163
catttatata gacaggcgtg aagacattca cgacaaaaac gcgaaattct atcccgtgac      60
canagaaggc agctacggct actcctacat cctggcgtgg gtggccttcg cctgcacctt      120
catcagcggc atgatgt                                     137

```

```

<210> 164
<211> 469
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(469)
<223> n = A,T,C or G

```

```

<400> 164
cttatcacia tgaatgttct cctgggcagc gttgtgatct ttgccacctt cgtgacttta      60
tgcaatgcat catgctatct catacctaat gagggagttc caggagattc aaccaggaaa      120

```

tgcattggatc	tcaaaggaaa	caaacaccca	ataaaactcg	agtggcagac	tgacaactgt	180
gagacatgca	cttgctacga	aacagaaatt	tcatgttgca	cccttgtttc	tacacctgtg	240
ggttatgaca	aagacaactg	ccaaagaatc	ttcaagaagg	aggactgcaa	gtatatcggtg	300
gtggagaaga	aggacccaaa	aaagacctgt	tctgtcagtg	aatggataat	ctaattgtgct	360
tctagtaggc	acagggctcc	caggccaggc	ctcattctcc	tctggcctct	aatagtcatt	420
gattgtgtag	ccatgcctat	cagtaaaaag	atntttgagc	aaacacttt		469

<210> 165

<211> 195

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(195)

<223> n = A,T,C or G

<400> 165

acagtttttt	atanatatcg	acattgccgg	cacttggtgt	cagtttcata	aagctgggtg	60
atccgctgtc	atccactatt	ccttggttag	agtaaaaatt	attcttatag	cccatgtccc	120
tgcaggccgc	ccgcccgtag	ttctcgttcc	agtcgtcttg	gcacacaggg	tgccaggact	180
tcctctgaga	tgagt					195

<210> 166

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(383)

<223> n = A,T,C or G

<400> 166

acatcttagt	agtgtggcac	atcagggggc	catcagggtc	acagtcactc	atagcctcgc	60
cgaggctgga	gtccacacca	ccggtgtagg	tgtgctcaat	cttgggcttg	gcgcccacct	120
ttggagaagg	gatatgctgc	acacacatgt	ccacaaagcc	tgtgaactcg	ccaaagaatt	180
tttgagacc	agcctgagca	aggggaggat	gttcagcttc	agctcctcct	tcgtcagggtg	240
gatgccaacc	tcgtctangg	tccgtgggaa	gctgggtgtc	acntcaccta	caacctggggc	300
gangatctta	taaagaggct	ccnagataaa	ctccacgaaa	cttctctggg	agctgctagt	360
nggggccttt	ttggtgaact	ttc				383

<210> 167

<211> 247

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(247)

<223> n = A,T,C or G

<400> 167

acagagccag	accttggcca	taaatgaanc	agagattaag	actaaacccc	aagtoganat	60
tggagcagaa	actggagcaa	gaagtgggcc	tggggctgaa	gtagagacca	aggccactgc	120

tatanccata cacagagcca actctcaggc caaggcnatg gttggggcag anccagagac	180
tcaatctgan tccaaagtgg tggctggaac actggctcatg acanaggcag tgactctgac	240
tgangtc	247

<210> 168
 <211> 273
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(273)
 <223> n = A,T,C or G

<400> 168	
acttctaagt tttctagaag tggaaggatt gtantcatcc tgaaaatggg tttacttcaa	60
aatccctcan ccttggtcct cactactgtc tatactgana gtgtcatggt tccacaaaagg	120
gctgacacct gagcctgnat tttcactcat ccctgagaag ccctttccag taggggtgggc	180
aattcccaac ttccttgcca caagcttccc aggccttctc ccctggaaaa ctccagcttg	240
agtcacagat acactcatgg gctgccctgg gca	273

<210> 169
 <211> 431
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(431)
 <223> n = A,T,C or G

<400> 169	
acagccttggt cttccccaaa ctccacagtc tcagtgcaga aagatcatct tccagcagtc	60
agtcagacc aggggtcaaag gatgtgacat caacagtttc tggtttcaga acaggttcta	120
ctactgtcaa atgaccccc atacttcctc aaaggctgtg gtaagttttg cacaggtgag	180
ggcagcagaa aggggggtant tactgatgga caccatcttc tctgtatact ccacactgac	240
cttgccatgg gcaaaggccc ctaccacaaa aacaatagga tcaactgctgg gcaccagctc	300
acgcacatca ctgacaaccg ggatggaaaa agaantgcca actttcatac atccaactgg	360
aaagtgatct gatactggat tcttaattac cttcaaaaagc ttctgggggc catcagctgc	420
tcgaacactg a	431

<210> 170
 <211> 266
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(266)
 <223> n = A,T,C or G

<400> 170	
acctgtgggc tgggctgtta tgctgtgcc ggctgctgaa agggagttca gaggtggagc	60
tcaaggagct ctgcaggcat tttgccaanc ctctccanag canagggagc aacctacact	120
ccccgctaga aagacaccag attggagtc tgggaggggg agttgggggtg ggcatttgat	180

gtatacttgt cacctgaatg aangagccag agaggaanga gacgaanatg anattggcct 240
tcaaagctag gggctctggca ggtgga 266

<210> 171

<211> 1248

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (1248)

<223> n = A,T,C or G

<400> 171

```

ggcagccaaa tcataaacgg cgaggactgc agcccgcaact cgcagccctg gcaggcggca      60
ctgggtcatgg aaaacgaatt gttctgctcg ggcgtcctgg tgcacccgca gtgggtgctg      120
tcagccgcac actgtttcca gaagtgaagt cagagctcct acaccatcgg gctgggcctg      180
cacagtcttg aggccgacca agagccaggg agccagatgg tggaggccag cctctccgta      240
cggcacccag agtacaacag acccttgctc gctaacgacc tcatgctcat caagttggac      300
gaatccgtgt ccgagtctga caccatccgg agcatcagca ttgcttcgca gtgccctacc      360
gcggggaaact cttgcctcgt ttctggctgg ggtctgctgg cgaacggcag aatgcctacc      420
gtgctgcagt gcgtgaacgt gtcggtggtg tctgaggagg tctgcagtaa gctctatgac      480
ccgctgtacc accccagcat gttctgcgcc ggcggaggggc aagaccagaa ggactcctgc      540
aacggtgact ctggggggcc cctgatctgc aacgggtact tgcagggcct tgtgtctttc      600
ggaaaagccc cgtgtggcca agttggcgtg ccagggtgtct acaccaacct ctgcaaattc      660
actgagtgga tagagaaaac cgtccaggcc agttaactct ggggactggg aacccatgaa      720
attgaccccc aaatacatcc tgcggaagga attcaggaat atctgttccc agcccctcct      780
ccctcaggcc caggagtcca ggccccccagc ccctcctccc tcaaaccaag ggtacagatc      840
cccagcccct cctccctcag acccaggagt ccagaccccc cagcccctcc tccctcagac      900
ccaggagtcc agcccctcct ccctcagacc caggagtcca gacccccccag cccctcctcc      960
ctcagacca ggggtccagg cccccaaccc ctccctccctc agactcagag gtccaagccc     1020
ccaaccntc attcccaga cccagaggtc cagggtcccag cccctcntcc ctcagaccca     1080
gcggtccaat gccacctaga cntccctgt acacagtgcc cccttgtggc acgttgacct     1140
aaccttacca gttggttttt catttttngt ccctttcccc tagatccaga aataaagttt     1200
aagagaagng caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa     1248

```

<210> 172

<211> 159

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1) ... (159)

<223> Xaa = Any Amino Acid

<400> 172

```

Met Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro
 1              5              10              15
Leu Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser
              20              25              30
Glu Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr
              35              40              45
Ala Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly
 50              55              60

```



```

Arg Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu
65              70              75              80
Glu Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe
85              90              95
Cys Ala Gly Gly Gly Gln Xaa Gln Xaa Asp Ser Cys Asn Gly Asp Ser
100            105            110
Gly Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe
115            120            125
Gly Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn
130            135            140
Leu Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
145            150            155

```

```

<210> 173
<211> 1265
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1265)
<223> n = A,T,C or G

```

```

<400> 173
ggcagcccgcc actcgcagcc ctggcaggcg gcactgggtca tggaaaacga attgttctgc      60
tcgggcgctcc tgggtgcatcc gcagtgggtg ctgtcagccg cacactgttt ccagaactcc      120
tacaccatcg ggctgggcctt gcacagtctt gaggccgacc aagagccagg gagccagatg      180
gtggaggcca gcctctccgt acggcaccca gagtacaaca gacccttgct cgctaacgac      240
ctcatgctca tcaagttgga cgaatccgtg tccgagtctg acaccatccg gagcatcagc      300
attgcttcgc agtgccctac cgcggggaac tcttgccctg tttctggctg gggctctgctg      360
gcgaacgggtg agctcacggg tgtgtgtctg ccctcttcaa ggaggctctc tgcccagtcg      420
cgggggctga cccagagctc tgcgtcccag gcagaatgcc taccgtgctg cagtgcgtga      480
acgtgtcggg ggtgtctgag gaggtctgca gtaagctcta tgaccgctg taccaccca      540
gcatgttctg cggcggcgga gggcaagacc agaaggactc ctgcaacggg gactctgggg      600
ggccccctgat ctgcaacggg tacttgagcagg gccttgtgtc ttccggaaaa gccccgtgtg      660
gccaaagtgg cgtgccagggt gtctacacca acctctgcaa attcactgag tggatagaga      720
aaaccgtcca ggccagttaa ctctggggac tgggaaccca tgaaattgac ccccaaatac      780
atcctgcgga aggaattcag gaatatctgt tcccagcccc tcctccctca ggcccaggag      840
tccaggcccc cagcccctcc tccctcaaac caagggtaca gateccccagc ccctcctccc      900
tcagacccag gagtccagac cccccagccc ctctcctc agacccagga gtccagcccc      960
tcctcentca gaccagggag tccagacccc ccagcccctc ctccctcaga cccagggggt      1020
gaggccccca acccctcctc cttcagagtc agagggtcaa gcccccaacc cctcgttccc      1080
cagacccaga ggtnnaggtc ccagcccctc ttcctcaga cccagnngtc caatgccacc      1140
tagattttcc ctgnacacag tgcccccttg tggnanngtt acccaacctt accagttggg      1200
ttttcatttt tngtcccttt cccctagatc cagaaataaa gtttaagaga ngngcaaaaa      1260
aaaaa                                           1265

```

```

<210> 174
<211> 1459
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1459)

```

<223> n = A,T,C or G

<400> 174

ggtcagccgc	acactgtttc	cagaagtgcg	tgcagagctc	ctacaccatc	gggctggggc	60
tgcacagtct	tgaggccgac	caagagccag	ggagccagat	ggtggaggcc	agcctctccg	120
tacggcaccc	agagtacaac	agacccttgc	tcgctaacga	cctcatgctc	atcaagtgtg	180
acgaatccgt	gtccgagtct	gacaccatcc	ggagcatcag	cattgcttcg	cagtgccta	240
ccgcggggaa	ctcttgcttc	gtttctggct	ggggtctgct	ggcgaacggt	gagctcacgg	300
gtgtgtgtct	gccctcttca	aggaggtcct	ctgcccagtc	gcgggggctg	acccagagct	360
ctgcgtccca	ggcagaatgc	ctaccgtgct	gcagtgcgtg	aacgtgtcgg	tgggtgtctga	420
ngaggtctgc	antaagctct	atgaccgcgt	gtaccacccc	ancatgttct	gcgccggcgg	480
agggcaagac	cagaaggact	cctgcaacgt	gagagagggg	aaaggggagg	gcaggcgact	540
caggggaagg	tggagaagg	ggagacagag	acacacaggg	ccgcatggcg	agatgcagag	600
atggagagac	acacagggag	acagtgacaa	ctagagagag	aaactgagag	aaacagagaa	660
ataaacacag	gaataaagag	aagcaaagga	agagagaaac	agaaacagac	atggggaggc	720
agaaacacac	acacatagaa	atgcagttga	ccttccaaca	gcatggggcc	tgaggcggt	780
gacctccacc	caatagaaaa	tcctcttata	acttttgact	ccccaaaaac	ctgactagaa	840
atagcctact	gttgacgggg	agccttacca	ataacataaa	tagtcgattt	atgcatacgt	900
tttatgcatt	catgatatac	ctttgttggg	attttttgat	atttctaagc	tacacagttc	960
gtctgtgaat	ttttttaaat	tgttgcaact	ctcctaaaat	ttttctgatg	tgtttattga	1020
aaaaatccaa	gtataagtgg	acttgtgcat	tcaaaccagg	gttgttcaag	ggtcaactgt	1080
gtacccagag	ggaaacagtg	acacagattc	atagaggtga	aacacgaaga	gaaacaggaa	1140
aaatcaagac	tctacaaaga	ggctgggcag	ggtgggtcat	gcctgtaate	ccagcacttt	1200
gggaggcgag	gcaggcgag	cacttgaggt	aaggagttca	agaccagcct	ggccaaaatg	1260
gtgaaatcct	gtctgtacta	aaaatacaaa	agttagctgg	atatggtggc	aggcgctgt	1320
aatcccagct	acttgggagg	ctgaggcgag	agaattgctt	gaatatggga	ggcagaggtt	1380
gaagtgaagt	gagatcacac	cactatactc	cagctggggc	aacagagtaa	gactctgtct	1440
caaaaaaaaa	aaaaaaaaa					1459

<210> 175

<211> 1167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (1167)

<223> n = A,T,C or G

<400> 175

gcgcagccct	ggcaggcggc	actggctcatg	gaaaacgaat	tgttctgctc	gggcgtcctg	60
gtgcatccgc	agtgggtgct	gtcagccgca	cactgtttcc	agaactccta	caccatcggg	120
ctgggcctgc	acagtcttga	ggccgaccaa	gagccaggga	gccagatggt	ggaggccagc	180
ctctccgtac	ggcaccgaga	gtacaacaga	ctcttgctcg	ctaacgacct	catgctcatc	240
aagttggacg	aatccgtgtc	cgagtctgac	accatccgga	gcatcagcat	tgttctgcag	300
tgccctaccg	cggggaactc	ttgcctcgtn	tctggctggg	gtctgctggc	gaacggcaga	360
atgcctaccg	tgtgtcactg	cgtgaacgtg	tcgggtggtg	ctgaggangt	ctgcagtaag	420
ctctatgacc	cgctgtacca	ccccagcatg	ttctgcgccg	gcggaggggc	agaccagaag	480
gactcctgca	acggtgactc	tggggggccc	ctgatctgca	acgggtactt	gcagggcctt	540
gtgtctttcg	gaaaagcccc	gtgtggccaa	cttggcgtgc	caggtgtcta	caccaacctc	600
tgcaaattca	ctgagtggat	agagaaaacc	gtccagncca	gttaactctg	gggactggga	660
acccatgaaa	ttgaccccaa	aatacatcct	gcggaangaa	ttcaggaata	tctgttccca	720
gcccctcctc	cctcaggccc	aggagtccag	gccccagcc	cctcctccct	caaaccaagg	780
gtacagatcc	ccagccccct	ctccctcaga	cccaggagtc	cagaccccc	agccccctnt	840
ccntcagacc	caggagtcca	gcccctcctc	cntcagacgc	aggagtccag	accccccagc	900

```

ccntcntccg tcagacccag ggggtgcaggc cccaacccc tcntccntca gagtcagagg      960
tccaagcccc caacccctcg ttccccagac ccagaggtnc aggtcccagc cctcctccc      1020
tcagacccag cgggtccaatg ccacctagan tntccctgta cacagtggcc ccttggtggca      1080
ngttgaccca accttaccag ttgggttttc atttttgtc cctttcccct agatccagaa      1140
ataaagtnta agagaagcgc aaaaaaa      1167

```

<210> 176

<211> 205

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(205)

<223> Xaa = Any Amino Acid

<400> 176

```

Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1      5      10      15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
 20      25      30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
 35      40      45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Leu Leu Leu
 50      55      60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
 65      70      75      80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
 85      90      95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met
 100     105     110
Pro Thr Val Leu His Cys Val Asn Val Ser Val Val Ser Glu Xaa Val
 115     120     125
Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala
 130     135     140
Gly Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly
 145     150     155     160
Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys
 165     170     175
Ala Pro Cys Gly Gln Leu Gly Val Pro Gly Val Tyr Thr Asn Leu Cys
 180     185     190
Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Xaa Ser
 195     200     205

```

<210> 177

<211> 1119

<212> DNA

<213> Homo sapien

<400> 177

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gcgcactcgc agccttgcca ggcggcactg gtcattggaaa acgaattgtt ctgctcgggc      60
gtcctggtgc atccgcagtg ggtgctgtca gccgcacact gtttccagaa ctctacacc      120
atcgggctgg gcctgcacag tcttgaggcc gaccaagagc cagggagcca gatggtggag      180
gccagcctct ccgtacggca cccagagtac aacagaccct tgctcgctaa cgacctcatg      240
ctcatcaagt tggacgaatc cgtgtccgag tctgacacca tccggagcat cagcattgct      300

```

```

tcgcagtgcc ctaccgcggg gaactcttgc ctcgtttctg gctggggtct gctggcgaac 360
gatgctgtga ttgccatcca gtcccagact gtgggaggct gggagtgtga gaagctttcc 420
caaccctggc aggggtgtac catttcggca acttccagtg caaggacgtc ctgctgcatc 480
ctcactgggt gctcactact gctcactgca tcaccgcgaa cactgtgatc aactagccag 540
caccatagtt ctccgaagtc agactatcat gattactgtg ttgactgtgc tgtctattgt 600
actaaccatg ccgatgttta ggtgaaatta gcgtcacttg gcctcaacca tcttggtatc 660
cagttatcct cactgaattg agatttcctg cttcagtgtc agccattccc acataatttc 720
tgacctacag aggtgagggg tcatatagct cttcaaggat gctgggtactc cctcacaaaa 780
ttcattttctc ctgtttagt gaaagggtgc cctctggag cctcccaggg tgggtgtgca 840
ggtcacaatg atgaatgtat gatcgtgttc ccattaccca aagcctttaa atccctcatg 900
ctcagtacac cagggcaggt ctagcatttc ttcatttagt gtatgctgtc cattcatgca 960
accacctcag gactcctgga ttctctgcct agttgagctc ctgcatgctg cctccttggg 1020
gaggtgaggg agagggccca tggttcaatg ggatctgtgc agttgtaaca cattaggtgc 1080
ttaataaaca gaagctgtga tgttaaaaaa aaaaaaaaaa 1119

```

<210> 178

<211> 164

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1) ... (164)

<223> Xaa = Any Amino Acid

<400> 178

```

Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
1      5      10      15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
20     25     30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
35     40     45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu
50     55     60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
65     70     75     80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
85     90     95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Asp Ala Val
100    105    110
Ile Ala Ile Gln Ser Xaa Thr Val Gly Gly Trp Glu Cys Glu Lys Leu
115    120    125
Ser Gln Pro Trp Gln Gly Cys Thr Ile Ser Ala Thr Ser Ser Ala Arg
130    135    140
Thr Ser Cys Cys Ile Leu Thr Gly Cys Ser Leu Leu Leu Thr Ala Ser
145    150    155    160
Pro Gly Thr Leu

```

<210> 179

<211> 250

<212> DNA

<213> Homo sapien

<400> 179

ctggagtgcc	ttggtgtttc	aagccccctgc	aggaagcaga	atgcaccttc	tgaggcacct	60
ccagctgccc	ccggccgggg	gatgcgaggc	tcggagcacc	cttgcccggc	tgtgattgct	120
gccaggcact	gttcatctca	gcttttctgt	ccctttgctc	ccggcaagcg	cttctgctga	180
aagttcatat	ctggagcctg	atgtcttaac	gaataaaggt	cccatgctcc	acccgaaaaa	240
aaaaaaaaaa						250

<210> 180

<211> 202

<212> DNA

<213> Homo sapien

<400> 180

actagtccag	tgtggtggaa	ttccattgtg	ttggggcccaa	cacaatggct	acctttaaca	60
tcacccagac	cccggcccctg	cccgtgcccc	acgctgctgc	taacgacagt	atgatgctta	120
ctctgctact	cggaaactat	ttttatgtaa	ttaatgtatg	ctttcttggt	tataaatgcc	180
tgattttaaaa	aaaaaaaaaa	aa				202

<210> 181

<211> 558

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (558)

<223> n = A,T,C or G

<400> 181

tccytttgkt	naggtttkkg	agacamccck	agacctwaan	ctgtgtcaca	gacttcyngg	60
aatgttttagg	cagtgtctagt	aatttcytcg	taatgattct	gttattactt	tcctnattct	120
ttattcctct	ttcttctgaa	gattaatgaa	gttgaaaatt	gagggtggata	aatacaaaaa	180
ggtagtgatga	tagtataagt	atctaagtgc	agatgaaagt	gtgttatata	tatccattca	240
aaattatgca	agttagtaat	tactcagggt	taactaaatt	actttaatat	gctgttgaac	300
ctactctggt	ccttggctag	aaaaaattat	aaacaggact	ttgttagttt	gggaagccaa	360
attgataata	ttctatgttc	taaaagttgg	gctatacata	aattattaag	aaatatggaw	420
ttttattccc	aggaatatgg	kgttcatttt	atgaatatta	cscrggatag	awgtwtgagt	480
aaaaycagtt	ttggtwaata	ygtwaatatg	tcmtaaataa	acaakgcttt	gacttatttc	540
caaaaaaaaa	aaaaaaaaa					558

<210> 182

<211> 479

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (479)

<223> n = A,T,C or G

<400> 182

acagggwttk	grggatgcta	agsecccrga	rwtygtttga	tccaaccctg	gcttwttttc	60
agaggggaaa	atggggccta	gaagttacag	mecatytagy	tggtgcgmtg	gcacccctgg	120
cstcacacag	astcccaggt	agctgggact	acaggcacac	agtcactgaa	gcaggccctg	180
ttwgcaattc	acgttgccac	ctccaactta	aacattcttc	atatgtgatg	tccttagtca	240
ctaagggttaa	actttccac	ccagaaaagg	caacttagat	aaaatcttag	agtactttca	300

tactmttcta	agtcctcttc	cagcctcact	kkgagtcctm	cytggggggtt	gataggaant	360
ntctcttggc	tttctcaata	aartctctat	ycatctcatg	tttaatttgg	tacgcataara	420
awtgstgara	aaattaaaaat	gttctgggty	macttttaaaa	aaaaaaaaaa	aaaaaaaaaa	479

<210> 183

<211> 384

<212> DNA

<213> Homo sapien

<400> 183

aggcgggagc	agaagctaaa	gccaaagccc	aagaagagt	gcagtgccag	cactgggtgcc	60
agtaccagta	ccaataacag	tgccagtgcc	agtgccagca	ccagtgggtg	cttcagtgtc	120
ggtgccagcc	tgaccgccac	tctcacattt	gggtctcttc	ctggccttgg	tggagctggt	180
gccagcacca	gtggcagctc	tggtgcctgt	ggtttctcct	acaagtgaga	ttttagatat	240
tgtaatcct	gccagtcttt	ctcttcaagc	cagggtgcat	cctcagaaac	ctactcaaca	300
cagcactcta	ggcagccact	atcaatcaat	tgaagttgac	actctgcatt	aratctattt	360
gccatttcaa	aaaaaaaaaa	aaaa				384

<210> 184

<211> 496

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (496)

<223> n = A,T,C or G

<400> 184

accgaattgg	gaccgctggc	ttataagcga	tcattgtyynt	ccrgtatcac	ctcaacgagc	60
agggagatcg	agtctatacg	ctgaagaaat	ttgacccgat	gggacaacag	acctgctcag	120
cccatacctgc	tcggttctcc	ccagatgaca	aataactctsg	acaccgaatc	accatcaaga	180
aacgcttcaa	ggtgctcatg	accagcaaac	cgcgcctctg	cctctgaggg	tcccttaaac	240
tgatgtcttt	tctgccacct	gttacccttc	ggagactccg	taaccaaact	cttcggactg	300
tgagccctga	tgcttttttg	ccagccatac	tctttggcat	ccagtctctc	gtggcgattg	360
attatgcttg	tgtgaggcaa	tcattggtggc	atcacccata	aagggaacac	atttgacttt	420
tttttctcat	attttaaatt	actacmagaw	tattwmagaw	waaatgawtt	gaaaaactst	480
taaaaaaaaa	aaaaaa					496

<210> 185

<211> 384

<212> DNA

<213> Homo sapien

<400> 185

gctggtagcc	tatggcgkcg	cccacggagg	ggctcctgag	gccacggrac	agtgacttcc	60
caagtatcyt	gcgcsgcgtc	ttctaccgtc	cctacctgca	gatcttcggg	cagattcccc	120
aggaggacat	ggacgtggcc	ctcatggagc	acagcaactg	ytctgctggg	cccggcttct	180
gggcacaccc	tcctggggcc	caggcgggca	cctgcgtctc	ccagtatgcc	aactggctgg	240
tggtgctgct	cctcgctcat	ttcctgctcg	tggccaacat	cctgctggtc	aacttgctca	300
ttgccatgtt	cagttacaca	ttcggcaaag	tacagggcaa	cagcgatctc	tactgggaag	360
gcgcagcggt	accgcctcat	ccgg				384

<210> 186

<211> 577

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (577)

<223> n = A,T,C or G

<400> 186

gagttagctc	ctccacaacc	ttgatgaggt	cgtctgcagt	ggcctctcgc	ttcataccgc	60
tnccatcgtc	atactgtagg	tttgccacca	cytcctggca	tcttggggcg	gcntaatatt	120
ccaggaaact	ctcaatcaag	tcaccgtcga	tgaaacctgt	gggctgggtc	tgtcttccgc	180
tcgggtgtgaa	aggatctccc	agaaggagtg	ctcgatcttc	cccacacttt	tgatgacttt	240
attgagtcga	ttctgcatgt	ccagcaggag	gttgtaccag	ctctctgaca	gtgaggtcac	300
cagccctatc	atgccgttga	mcgtgccgaa	garcaccgag	ccttggtgtg	gggkkgaaagt	360
ctcaccacaga	ttctgcatta	ccagagagcc	gtggcaaaaag	acattgacaa	actcgcccag	420
gtggaaaaaag	amcamctcct	ggargtgctn	gccgctcctc	gtcmgttggt	ggcagcgctw	480
tccttttgac	acacaaacaa	gttaaaggca	ttttcagccc	ccagaaantt	gtcatcatcc	540
aagatntcgc	acagcactna	tccagttggg	attaaat			577

<210> 187

<211> 534

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (534)

<223> n = A,T,C or G

<400> 187

aacatcttcc	tgtataatgc	tgtgtaatat	cgatccgatn	ttgtctgstg	agaatycatw	60
actkggaaaa	gmaacattaa	agcctggaca	ctgggtattaa	aattcacaat	atgcaacact	120
ttaaacagtg	tgtcaatctg	ctcccyynac	tttgtcatca	ccagtctggg	aakaagggtta	180
tgccctattc	acacctgtta	aaagggcgct	aagcattttt	gattcaacat	cttttttttt	240
gacacaagtc	cgaaaaaagc	aaaagtaaag	agttatyaat	ttgttagcca	attcactttc	300
ttcatgggac	agagccatyt	gatttaaaaa	gcaaattgca	taatattgag	cttyggggagc	360
tgatatttga	gcggaagagt	agcctttcta	cttcaccaga	cacaactccc	tttcatattg	420
ggatgttnac	naaagtwatg	tctctwacag	atgggatgct	tttgtggcaa	ttctgttctg	480
aggatctccc	agttttattta	ccacttgcac	aagaaggcgt	tttcttcctc	aggc	534

<210> 188

<211> 761

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (761)

<223> n = A,T,C or G

<400> 188

agaaaccagt	atctctnaaa	acaacctctc	ataccttggt	gacctaat	ttgtgtgcgtg	60
ttgtgtgtgcg	cgcataattat	atagacaggc	acatcttttt	tacttttgta	aaagcttatg	120
cctctttgggt	atctatatct	gtgaaagttt	taatgatctg	ccataatgtc	ttggggacct	180

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ttgtcttctg tgtaaatggt actagagaaa acacctatnt tatgagtcaa tctagttngt      240
tttattcgac atgaaggaaa tttccagatn acaacactna caaactctcc ctkgackarg      300
ggggacaaaag aaaagcaaaa ctgamcataa raaacaatwa cctggtgaga arttgcataa      360
acagaaatwr ggtagtatat tgaarnacag catcattaaa rmgttwtktt wttctccctt      420
gcaaaaaaca tgtacngact tcccgttgag taatgccaaag ttgttttttt tatnataaaa      480
cttgcccttc attacatggt tnaaagtggg gtgggtggggc aaaatattga aatgatggaa      540
ctgactgata aagctgtaca aataagcagt gtgcctaaca agcaacacag taatgttgac      600
atgcttaatt cacaaatgct aatttcatta taaatgtttg ctaaaataca ctttgaacta      660
tttttctgtt tcccagagc tgagatntta gattttatgt agtatnaagt gaaaaantac      720
gaaaataata acattgaaga aaaaananaa aaanaaaaaa a                                761

```

<210> 189

<211> 482

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (482)

<223> n = A,T,C or G

<400> 189

```

tttttttttt tttgccgatn ctactatttt attgcaggan gtgggggtgt atgcaccgca      60
caccgggggt atnagaagca agaaggaagg agggagggca cagccccttg ctgagcaaca      120
aagccgcctg ctgccttctc tgtctgtctc ctggtgcagg cacatgggga gaccttcccc      180
aaggcagggg ccaccagtcg aggggtggga atacaggggg tgggangtgt gcataagaag      240
tgataggcac agggcaccgg gtacagaccc ctcggctcct gacaggtnga tttcgaccag      300
gtcattgtgc cctgcccagg cacagcgtna atctggaaaa gacagaatgc tttccttttc      360
aaatttggct ngtcatngaa ngggcanttt tccaanttng gctnggtcct ggtacncttg      420
gttcgggcca gtcncnctc caaaaantat tcaccnntc ccnaattgct tgcnggnccc      480
cc                                482

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<210> 190

<211> 471

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (471)

<223> n = A,T,C or G

<400> 190

```

tttttttttt ttttaaaaca gtttttcaca acaaaattta ttagaagaat agtgggttttg      60
aaaactctcg catccagtga gaactaccat acaccacatt acagctngga atgtntctca      120
aatgtctggt caaatgatac aatggaacca ttcaatctta cacatgcacg aaagaacaag      180
cgcttttgac atacaatgca caaaaaaaaa agggggggggg gaccacatgg attaaaattt      240
taagtactca tcacatacat taagacacag ttctagtcca gtcnaaaatc agaactgcnt      300
tgaaaaaatt catgtatgca atccaaccaa agaacttnat tggatgatcat gantnctcta      360
ctacatcnac cttgatcatt gccaggaacn aaaagttnaa ancacncngt acaaaaaanaa      420
tctgtaattn anttcaacct ccgtacngaa aaatnttntt tatacactcc c                                471

```

<210> 191

<211> 402

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (402)

<223> n = A,T,C or G

<400> 191

gagggattga	aggtctgttc	tastgtcggm	ctgttcagcc	accaactcta	acaagttgct	60
gtcttccact	cactgtctgt	aagcttttta	acccagacwg	tatcttcata	aatagaacaa	120
attcttcacc	agtcacatct	tctaggacct	ttttggattc	agttagtata	agctcttcca	180
cttcctttgt	taagacttca	tctggtaaag	tcttaagttt	tgtagaaagg	aattyaattg	240
ctcgttctct	aacaatgtcc	tctccttgaa	gtatttggct	gaacaaccca	cctaaagtcc	300
ctttgtgcat	ccattttaaa	tatacttaat	agggcattgk	tncactaggt	taaattctgc	360
aagagtcac	tgtctgcaaa	agttgcgtta	gtatatctgc	ca		402

<210> 192

<211> 601

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (601)

<223> n = A,T,C or G

<400> 192

gagctcggat	ccaataatct	ttgtctgagg	gcagcacaca	tatncagtgc	catggnaact	60
ggtctacccc	acatggggagc	agcatgccgt	agntatataa	ggtcattccc	tgagtcagac	120
atgcytyttt	gaytaccgtg	tgccaagtgc	tggtgattct	yaacacacyt	ccatcccgyt	180
cttttgtgga	aaaactggca	cttktctgga	actagcarga	catcacttac	aaattcacc	240
acgagacact	tgaaagggtg	aacaaagcga	ytcttgcat	gctttttgtc	cctccggcac	300
cagttgtcaa	tactaaccgg	ctggtttgcc	tccatcacat	ttgtgatctg	tagctctgga	360
tacatctcct	gacagtactg	aagaacttct	tcttttgttt	caaaagcarc	tcttgggtgcc	420
tggtggatca	ggttcccat	tcccagtcyg	aatgttcaca	tggtcatatt	wacttccac	480
aaaacattgc	gatttgaggc	tcagcaacag	caaatcctgt	tccggcattg	gctgcaagag	540
cctcgatgta	gccggccagc	gccaaaggcag	gcgccgtgag	ccccaccagc	agcagaagca	600
g						601

<210> 193

<211> 608

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (608)

<223> n = A,T,C or G

<400> 193

atacagccca	natcccacca	cgaagatgcg	cttggtgact	gagaacctga	tgcggtcact	60
ggctcccgctg	tagccccagc	gactctccac	ctgctggaag	cggttgatgc	tgactctytt	120
cccaacgcag	gcagmagcgg	gsccgggtcaa	tgaactccay	tcgtggcttg	gggtkgacgg	180
tkaagtgcag	gaagaggctg	accacctcgc	gggtccaccag	gatgcccagc	tgtgcgggac	240
ctgcagcgaa	actcctcgat	gggtcatgagc	gggaagcgaa	tgaggcccag	ggccttgccc	300

```

agaaccttcc gectgttctc tggcgtcacc tgcagctgct gccgctgaca ctccggcctcg      360
gaccagcgga caaacggcrt tgaacagccg cacctcacgg atgcccagtg tgtcgcgctc      420
caggammgsc accagcgtgt ccagggtcaat gtcgggtgaag ccctccgcgg gtratggcgt      480
ctgcagtgtt tttgtcgatg ttctccaggc acaggctggc cagctgcggt tcacgaaga      540
gtcgcgcctg cgtgagcagc atgaaggcgt tgtcggctcg cagttcttct tcaggaactc      600
cacgcaat                                         608

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<210> 194

<211> 392

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(392)

<223> n = A,T,C or G

<400> 194

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gaacggctgg accttgccctc gcattgtgct tgctggcagg gaataccttg gcaagcagyt      60
ccagtccgag cagccccaga ccgctgccgc ccgaagctaa gcctgcctct ggccttcccc      120
tccgcctcaa tgcagaacca gtagtgggag cactgtgttt agagttaaga gtgaacactg      180
tttgatttta cttgggaatt tcctctgtta tatagctttt cccaatgcta atttccaaac      240
aacaacaaca aaataacatg ttgcctgtt aagttgtata aaagtaggtg attctgtatt      300
taaagaaaat attactgtta catatactgc ttgcaatttc tgtatttatt gktnctstgg      360
aaataaatat agttattaaa ggttgtcant cc                                         392

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<210> 195

<211> 502

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(502)

<223> n = A,T,C or G

<400> 195

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ccsttkgagg ggtkaggkyc cagttyccga gtggaagaaa caggccagga gaagtgcgtg      60
ccgagctgag gcagatgttc ccacagtgc cccagagacc stgggstata gtytctgacc      120
cctcncaagg aaagaccacs ttctggggac atgggctgga gggcaggacc tagaggcacc      180
aaggggaaggc cccattccgg ggstgttccc cgaggaggaa ggggaaggggc tctgtgtgcc      240
ccccasgagg aagaggccct gagtcctggg atcagacacc ctttcacgtg tatccccaca      300
caaatgcaag ctcaccaagg tcccctctca gtccccttcc stacacctg amcggccact      360
gscscacacc caccagagc acgccacccg ccatggggar tgtgtcaag gartcgcnng      420
gcarcgtgga catctngtcc cagaaggggg cagaatctcc aatagangga ctgarcmstt      480
gctnanaaaa aaaaanaaaa aa                                         502

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<210> 196

<211> 665

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(665)

<223> n = A,T,C or G

<400> 196

ggttacttgg	tttcattgcc	accacttagt	ggatgtcatt	tagaaccatt	ttgtctgctc	60
cctctggaag	ccttgcgcag	agcggacttt	gtaattgttg	gagaataact	gctgaatttt	120
wagctgtttk	gagttgatts	gcaccaactgc	accacaaact	tcaatatgaa	aacyawttga	180
actwatttat	tatcttgtga	aaagtataac	aatgaaaatt	ttgttcatac	tgtattkac	240
aagtatgatg	aaaagcaawa	gatatatatt	cttttattat	gttaaattat	gattgccatt	300
attaatcggc	aaaatgtgga	gtgtatgttc	ttttcacagt	aatatatgcc	ttttgtaact	360
tcacttgggt	attttattgt	aaatgattta	caaaattctt	aatttaagar	aatgggtatgt	420
watattttatt	tcattaattt	ctttcctkgt	ttacgtwaat	tttgaaaaga	wtgcatgatt	480
tcttgacaga	aatcgatctt	gatgctgtgg	aagtagtttg	accacatcc	ctatgagttt	540
ttcttagaat	gtataaaggt	tgtagcccat	cnaacttcaa	agaaaaaat	gaccacatac	600
tttgcaatca	ggctgaaatg	tggcatgctn	ttctaattcc	aactttataa	actagcaaan	660
aagtg						665

<210> 197

<211> 492

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(492)

<223> n = A,T,C or G

<400> 197

ttttnttttt	ttttttttgc	aggaaggatt	ccattttattg	tggatgcatt	ttcacaatat	60
atgttttattg	gagcgatcca	ttatcagtga	aaagtatcaa	gtgtttataa	nattttttagg	120
aaggcagatt	cacagaacat	gctngtcngc	ttgcagtttt	acctcgtana	gatnacagag	180
aatttatagtc	naaccagtaa	acnaggaatt	tactttttcaa	aagattaaat	ccaaactgaa	240
caaaatttcta	ccctgaaact	tactccatcc	aaatattgga	ataanagtca	gcagtgatac	300
attctcttct	gaacttttaga	ttttctagaa	aaatatgtaa	tagtgatcag	gaagagctct	360
tgttcaaaag	tacaacnaag	caatgttccc	ttacatagag	ccttaattca	aactttgatc	420
catttcactc	ccatcacggg	agtcaatgct	acctgggaca	cttgtatttt	gttcatnctg	480
ancntggctt	aa					492

<210> 198

<211> 478

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(478)

<223> n = A,T,C or G

<400> 198

tttnttttgn	atttcantct	gtannaanta	ttttcattat	gtttattana	aaaatatnaa	60
tgtntccacn	acaaatcatn	ttacntnagt	aagaggccan	ctacattgta	caacatacac	120
tgagtatat	ttgaaaagga	caagttttaa	gtanacncat	attgccganc	atancacatt	180
tatacatggc	ttgattgata	tttagcacag	canaaactga	gtgagttacc	agaaanaaat	240
natatatgtc	aatcngattt	aagatacaaa	acagatccta	tggtacatan	catcntgtag	300
gagttgtggc	tttatgttta	ctgaaagtca	atgcagttcc	tgtacaaaga	gatggccgta	360
agcattctag	tacctctact	ccatgggttaa	gaatcgtaca	cttatgttta	catatgtnc	420

gggtaagaat tgtgttaagt naanttatgg agagggtccan gagaaaaatt tgatncaa 478

<210> 199
 <211> 482
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(482)
 <223> n = A,T,C or G

<400> 199
 agtgacttgt cctccaacaa aaccccttga tcaagtttgt ggcaactgaca atcagaccta 60
 tgctagttcc tgtcatctat tcgctactaa atgcagactg gagggggacca aaaaggggca 120
 tcaactccag ctggattatt ttggagcctg caaatctatt cctacttgta cggactttga 180
 agtgattcag tttcctctac ggatgagaga ctggctcaag aatatacctca tgcagcttta 240
 tgaagccnac tctgaacacg ctggttatct nagatgagaa ncagagaaat aaagtcnaga 300
 aaattttacct ggangaaaag aggccttngg ctggggacca tcccattgaa ccttctctta 360
 anggacttta agaanaaact accacatgtn tgtngtatcc tgggtgccngg ccgtttantg 420
 aacntngacn ncacccttnt ggaatanant cttgacngcn tcctgaactt gtcctctctgc 480
 ga 482

<210> 200
 <211> 270
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(270)
 <223> n = A,T,C or G

<400> 200
 cggccgcaag tgcaactcca gctggggccg tgcggacgaa gattctgcca gcagttggtc 60
 cgactgcgac gacggcgccg gcgacagtcg caggtgcagc gcggggcgct ggggtcctgc 120
 aaggctgagc tgacgccgca gaggtcgtgt cacgtcccac gaccttgacg ccgtcgggga 180
 cagccggaac agagcccggt gaangcggga ggcctcgggg agcccctcgg gaagggcggc 240
 ccgagagata cgcaggtgca ggtggccgcc 270

<210> 201
 <211> 419
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(419)
 <223> n = A,T,C or G

<400> 201
 tttttttttt ttttgaatc tactgcgagc acagcaggtc agcaacaagt ttattttgca 60
 gctagcaagg taacagggtg gggcatggtt acatgttcag gtcaacttcc tttgtcgtgg 120
 ttgattggtt tgtctttatg ggggcggggt ggggtagggg aaancgaagc anaantaaca 180
 tggagtgggt gcaccctccc tgtagaacct gggttacnaaa gcttggggga gttcacctgg 240

tctgtgaccg	tcattttctt	gacatcaatg	ttattagaag	tcaggatata	ttttagagag	300
tccactgtnt	ctggagggag	attagggttt	cttgccaana	tccaancaa	atccacntga	360
aaaagttgga	tgatncangt	acngaatacc	ganggcatan	ttctcatant	cgggtggcca	419

<210> 202

<211> 509

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(509)

<223> n = A,T,C or G

<400> 202

tttntttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tggcacttaa	tccattttta	tttcaaaatg	tctacaaant	ttnaatncnc	cattatacng	120
gtnattttnc	aaaatctaaa	nntttattcaa	atntnagcca	aantccttac	ncaaattnnaa	180
tacnncnaaa	aatcaaaaaat	atacntntct	ttcagcaaac	ttngttacat	aaattaaaaa	240
aatatatacg	gctgggtgtt	tcaaagtaca	attatcttaa	cactgcaaac	atnttttnnaa	300
ggaactaaaa	taaaaaaaaa	cactnccgca	aagggttaaag	ggaacaacaa	attcntttta	360
caacancnnc	nattataaaa	atcatatctc	aaatcttagg	ggaatatata	cttcacacng	420
ggatcttaac	ttttactnca	ctttgtttat	ttttttanaa	ccattgtntt	gggccaacaa	480
caatggnaat	nccnccnnc	tggtactagt				509

<210> 203

<211> 583

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(583)

<223> n = A,T,C or G

<400> 203

tttttttttt	ttttttttga	ccccctctt	ataaaaaaca	agttaccatt	ttattttact	60
tacacatatt	ttttttataa	ttggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaatggaaa	ctgccttaga	tacataattc	ttaggaatta	gcttaaaatc	tgcttaaagt	180
gaaaatcttc	tctagctctt	ttgactgtaa	atttttgact	cttgtaaaac	atccaaattc	240
atttttcttg	tctttaaaat	tatctaattc	ttccattttt	tccctattcc	aagtcaattt	300
gcttctctag	cctcatttcc	tagctcttat	ctactattag	taagtggctt	ttttcctaaa	360
agggaaaaca	ggaagagana	atggcacaca	aaacaaacat	tttatattca	tatttctacc	420
tacgttaata	aaatagcatt	ttgtgaagcc	agctcaaaaag	aaggccttaga	tccttttatg	480
tccatttttag	tcactaaacg	atatcnaaag	tgccagaatg	caaaagggtt	gtgaacattt	540
attcaaaagc	taatataaga	tatttcacat	actcatcttt	ctg		583

<210> 204

<211> 589

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(589)

<223> n = A,T,C or G

<400> 204

ttttttttnt	tttttttttt	tttttttctc	ttcttttttt	ttganaatga	ggatcgagtt	60
tttcaactct	tagatagggc	atgaagaaaa	ctcatctttc	cagcttttaa	ataacaatca	120
aatctcttat	gctatatcat	attttaagtt	aaactaatga	gtcactggct	tatcttctcc	180
tgaaggaaat	ctgttcattc	ttctcattca	tatagttata	tcaagtacta	ccttgcatat	240
tgagaggttt	ttcttctcta	tttacacata	tatttccatg	tgaatttgta	tcaaaccctt	300
attttcatgc	aaactagaaa	ataatgtntt	cttttgcata	agagaagaga	acaatatnag	360
cattacaaaa	ctgctcaaat	tgtttggtta	gnttatccat	tataattagt	tnggcaggag	420
ctaatacaaa	tcacatttac	ngacnagcaa	taataaaaact	gaagtaccag	ttaaatatcc	480
aaaataatta	aaggaacatt	tttagcctgg	gtataattag	ctaattcact	ttacaagcat	540
ttattnagaa	tgaattcaca	tgttattatt	ccntagccca	acacaatgg		589

<210> 205

<211> 545

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(545)

<223> n = A,T,C or G

<400> 205

tttttntttt	ttttttcagt	aataatcaga	acaatattta	tttttatatt	taaaattcat	60
agaaaagtgc	cttacattta	ataaaagttt	gtttctcaaa	gtgatcagag	gaattagata	120
tngtcttgaa	caccaatatt	aatttgagga	aaatacacca	aaatacatta	agtaaattat	180
ttaagatcat	agagcttgta	agtgaaga	taaaatttga	cctcagaaac	tctgagcatt	240
aaaaatccac	tattagcaaa	taaattacta	tggacttctt	gctttaattt	tgtgatgaat	300
atgggggtgc	actggtaaac	caacacattc	tgaaggatac	attacttagt	gatagattct	360
tatgtacttt	gctanatnac	gtggatatga	gttgacaagt	ttctctttct	tcaatctttt	420
aaggggcnga	ngaaatgagg	aagaaaagaa	aaggattacg	catactgttc	tttctatngg	480
aaggattaga	tatgtttcct	ttgccaatat	taaaaaata	ataatgttta	ctactagtga	540
aaccc						545

<210> 206

<211> 487

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(487)

<223> n = A,T,C or G

<400> 206

tttttttttt	tttttttagtc	aagtttctna	tttttattat	aattaaagtc	ttgggtcattt	60
catttattag	ctctgcaact	tacatattta	aattaaagaa	acgttnttag	acaactgtna	120
caatttataa	atgtaagggtg	ccattattga	gtanatatat	tcctccaaga	gtggatgtgt	180
cccttctccc	accaactaat	gaancagcaa	cattagttta	attttattag	tagatnatac	240
actgctgcaa	acgctaattc	tcttctccat	ccccatgtng	atattgtgta	tatgtgtgag	300
ttggtnagaa	tgcatcanca	atctnacaat	caacagcaag	atgaagctag	gcntgggctt	360
tcggtgaaaa	tagactgtgt	ctgtctgaat	caaatgatct	gacctatcct	cgggtggcaag	420
aactcttcga	accgcttctt	caaaggcngc	tgccacattt	gtggcntctn	ttgcaattgt	480

ttcaaaa

487

<210> 207
 <211> 332
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(332)
 <223> n = A,T,C or G

<400> 207
 tgaattggct aaaagactgc atttttanaa ctagcaactc ttattttcttt cctttaaaaa 60
 tacatagcat taaatcccaa atcctattta aagacctgac agcttgagaa ggtcactact 120
 gcatttatag gaccttctgg tggttctgct gttacntttg aantctgaca atccttgana 180
 atctttgcat gcagaggagg taaaagggtat tggattttca cagaggaana acacagcgca 240
 gaaatgaagg ggccaggctt actgagcttg tccactggag ggctcatggg tgggacatgg 300
 aaaagaaggc agcctaggcc ctggggagcc ca 332

<210> 208
 <211> 524
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(524)
 <223> n = A,T,C or G

<400> 208
 agggcgtggt gcggaggggcg ttactgtttt gtctcagtaa caataaatac aaaaagactg 60
 gttgtgttcc ggccccatcc aaccacgaag ttgatttctc ttgtgtgcag agtgactgat 120
 tttaaaggac atggagcttg tcacaatgtc acaatgtcac agtggtgaagg gcacactcac 180
 tcccgcgtga ttcacattta gcaaccaaca atagctcatg agtccatact tgtaaatact 240
 tttggcagaa tacttnttga aacttgacaga tgataactaa gatccaagat atttcccaaa 300
 gtaaatagaa gtgggtcata atattaatta cctgttcaca tcagcttcca ttacaagtc 360
 atgagcccag aactgacat caaactaagc ccacttagac tcttcaccac cagtctgtcc 420
 tgtcatcaga caggaggctg tcaccttgac caaattctca ccagtcaatc atctatccaa 480
 aaaccattac ctgatccact tccggtaatg caccaccttg gtga 524

<210> 209
 <211> 159
 <212> DNA
 <213> Homo sapien

<400> 209
 ggggtgaggaa atccagagtt gccatggaga aaattccagt gtcagcattc ttgctccttg 60
 tggccctctc ctacactctg gccagagata ccacagtcaa acctggagcc aaaaaggaca 120
 caaaggactc tcgacccaaa ctgccccaga ccctctcca 159

<210> 210
 <211> 256
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (256)
 <223> n = A,T,C or G

<400> 210
 actccctggc agacaaaggc agaggagaga gctctgttag ttctgtgttg ttgaactgcc 60
 actgaatttc tttccacttg gactattaca tgccanttga gggactaatg gaaaaacgta 120
 tggggagatt ttanccaatt tangtntgta aatggggaga ctggggcagg cgggagagat 180
 ttgcagggtg naaatgggan ggctgggttg ttanatgaac agggacatag gaggtaggca 240
 ccaggatgct aaatca 256

<210> 211
 <211> 264
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (264)
 <223> n = A,T,C or G

<400> 211
 acattgtttt tttagataa agcattgaga gagctctcct taacgtgaca caatggaagg 60
 actggaacac ataccacat ctttgttctg agggataatt ttctgataaa gtcttgctgt 120
 atattcaagc acatatgtta tatattattc agttccatgt ttatagccta gttaaggaga 180
 ggggagatac attcngaaag aggactgaaa gaaatactca agtnggaaaa cagaaaaaga 240
 aaaaaaggag caaatgagaa gcct 264

<210> 212
 <211> 328
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (328)
 <223> n = A,T,C or G

<400> 212
 acccaaaaat ccaatgctga atatttggtc tcattattcc canattcttt gattgtcaaa 60
 ggatttaatg ttgtctcagc ttgggcactt cagttaggac ctaaggatgc cagccggcag 120
 gtttatatat gcagcaacaa tattcaagcg cgacaacagg ttattgaact tgcccgccag 180
 ttnaatttca ttccattga cttgggatcc ttatcatcag ccagagagat tgaaaattta 240
 ccctacnac tctttactct ctgganaggg ccagtgggtg tagctataag cttggccaca 300
 ttttttttct cttttattcct ttgtcaga 328

<210> 213
 <211> 250
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature

<222> (1)...(250)

<223> n = A,T,C or G

<400> 213

acttatgagc	agagcgacat	atccnagtgt	agactgaata	aaactgaatt	ctctccagtt	60
taaagcattg	ctcactgaag	ggatagaagt	gactgccagg	agggaaagta	agccaaggct	120
cattatgcca	aagganatat	acattttcaat	tctccaaact	tcttcctcat	tccaagagtt	180
ttcaatattt	gcatgaacct	gctgataanc	catgttaana	aacaaatata	tctctnacct	240
tctcatcggt						250

<210> 214

<211> 444

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(444)

<223> n = A,T,C or G

<400> 214

acccagaatc	caatgctgaa	tatttggctt	cattattccc	agattctttg	attgtcaaag	60
gatttaatgt	tgtctcagct	tgggcacttc	agttaggacc	taaggatgcc	agccggcagg	120
tttatatatg	cagcaacaat	attcaagcgc	gacaacaggt	tattgaactt	gcccggccagt	180
tgaatttcat	tcccattgac	ttgggaccc	tatcatcagc	canagagatt	gaaaattttac	240
ccctacgact	ctttactctc	tggagagggc	cagtgggtgt	agctataagc	ttggccacat	300
ttttttttcc	tttattcctt	tgtcagagat	gcgattcatc	catatgctan	aaaccaacag	360
agtgactttt	acaaaattcc	tataganatt	gtgaataaaa	ccttacctat	agttgccatt	420
actttgctct	ccctaataata	cctc				444

<210> 215

<211> 366

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(366)

<223> n = A,T,C or G

<400> 215

acttatgagc	agagcgacat	atccaagtgt	anactgaata	aaactgaatt	ctctccagtt	60
taaagcattg	ctcactgaag	ggatagaagt	gactgccagg	agggaaagta	agccaaggct	120
cattatgcca	aagganatat	acattttcaat	tctccaaact	tcttcctcat	tccaagagtt	180
ttcaatattt	gcatgaacct	gctgataagc	catgttgaga	aacaaatata	tctctgacct	240
tctcatcggt	aagcagaggc	tgtaggcaac	atggaccata	gcgaanaaaa	aacttagtaa	300
tccaagctgt	tttctacact	gtaaccaggt	ttccaaccaa	ggtggaaaatc	tcctatactt	360
ggtgcc						366

<210> 216

<211> 260

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> (1)...(260)
 <223> n = A,T,C or G

<400> 216
 ctgtataaac agaactccac tgcangaggg agggccgggc caggagaatc tccgcttgtc 60
 caagacaggg gcctaaggag ggtctccaca ctgctnntaa gggctnttnc atttttttat 120
 taataaaaag tnnaaaaggc ctcttctcaa cttttttccc ttnggctgga aaatttaaaa 180
 atcaaaaatt tcctnaagtt ntcaagctat catatatact ntatcctgaa aaagcaacat 240
 aattcttctt tccctccttt 260

<210> 217
 <211> 262
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(262)
 <223> n = A,T,C or G

<400> 217
 acctacgtgg gtaagtttan aaatgttata atttcaggaa naggaacgca tataattgta 60
 tcttgccctat aatttttctat tttaataagg aaatagcaaa ttgggggtggg gggaatgtag 120
 ggcattctac agtttgagca aaatgcaatt aaatgtggaa ggacagcact gaaaaatttt 180
 atgaataatc tgtatgatta tatgtctcta gagtagattt ataattagcc acttacccta 240
 atatccttca tgcttgtaaa gt 262

<210> 218
 <211> 205
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(205)
 <223> n = A,T,C or G

<400> 218
 accaaggtgg tgcattaccg gaantggatc aangacacca tcgtggccaa cccctgagca 60
 cccctatcaa ctcccctttg tagtaaaactt ggaaccttgg aaatgaccag gccaaagactc 120
 aggcctcccc agtttctactg acctttgtcc ttangtntna ngcccagggt tgctaggaaa 180
 anaaatcagc agacacaggt gtaaa 205

<210> 219
 <211> 114
 <212> DNA
 <213> Homo sapien

<400> 219
 tactgttttg tctcagtaac aataaatata aaaagactgg ttgtgttccg gccccatcca 60
 accacgaagt tgatttctct tgtgtgcaga gtgactgatt ttaaaggaca tggga 114

<210> 220
 <211> 93

<212> DNA

<213> Homo sapien

<400> 220

actagccagc acaaaaaggca gggtagcctg aattgctttc tgctctttac atttctttta	60
aaataagcat ttagtgctca gtcctactg agt	93

<210> 221

<211> 167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(167)

<223> n = A,T,C or G

<400> 221

actangtgca ggtgcgcaca aatatttgct gatattccct tcatcttgga ttccatgagg	60
tcttttgccc agcctgtggc tctactgtag taagtttctg ctgatgagga gccagnatgc	120
ccccactac cttccctgac gtccccaana aatcacccaa cctctgt	167

<210> 222

<211> 351

<212> DNA

<213> Homo sapien

<400> 222

agggcggtggt gcggagggcg gtactgacct cattagtagg aggatgcatt ctggcacccc	60
gttcttcacc tgtccccaa tctttaaag gccatactgc ataaagtcaa caacagataa	120
atgtttgctg aattaaagga tggatgaaaa aaattaataa tgaatttttg cataatccaa	180
ttttctcttt tatatttcta gaagaagttt ctttgagcct attagatccc gggaatcttt	240
taggtgagca tgattagaga gcttgtaggt tgcttttaca tatactctggc atatttgagt	300
ctcgtatcaa aacaatagat tggtaaaggt ggtattattg tattgataag t	351

<210> 223

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(383)

<223> n = A,T,C or G

<400> 223

aaaacaaaca acaaaaaaaa acaattcttc attcagaaaa attatcttag ggactgatat	60
tggttaattat ggtcaattta atwrtrttkt ggggcatttc cttacattgt cttgacaaga	120
ttaaaatgtc tgtgccaaaa ttttgatttt tatttggaga cttcttatca aaagtaatgc	180
tgccaaagga agtctaagga attagtagtg ttcccmctac ttgtttgagg tgtgctattc	240
taaaagattt tgatttcctg gaatgacaat tatattttta ctttggtggg ggaaanagtt	300
ataggaccac agtcttcact tctgatactt gtaaattaat cttttattgc acttgttttg	360
accattaagc tatatgttta aaa	383

<210> 224

<211> 320

<212> DNA

<213> Homo sapien

<400> 224

cccctgaagg	cttcttggtta	gaaaatagta	cagttacaac	caataggaac	aacaaaaaga	60
aaaagtttgt	gacattgtag	tagggagtg	gtaccctta	ctcccatca	aaaaaaaaat	120
ggatacatgg	ttaaaggata	raagggaat	attttatcat	atgttctaaa	agagaaggaa	180
gagaaaatac	tactttctcr	aaatggaagc	ccttaaagg	gctttgatac	tgaaggacac	240
aaatgtggcc	gtccatctc	ctttaragtt	gcatgacttg	gacacggtaa	ctgttgagc	300
tttaractcm	gcattgtgac					320

<210> 225

<211> 1214

<212> DNA

<213> Homo sapien

<400> 225

gaggactgca	gcccgcactc	gcagccctgg	caggcggcac	tggcatgga	aaacgaattg	60
ttctgctcgg	gcgtcctgg	gcaccgcag	tgggtgctgt	cagccgcaca	ctgtttccag	120
aactcctaca	ccatcgggct	gggcctgcac	agtcttgagg	ccgaccaaga	gccagggagc	180
cagatgggtg	aggccagcct	ctccgtacgg	caccagagt	acaacagacc	cttgcctcgt	240
aacgacctca	tgctcatcaa	gttggaagaa	tccgtgtccg	agtctgacac	catccggagc	300
atcagcattg	cttcgcagtg	ccctaccg	gggaactctt	gcctcgtttc	tggctgggg	360
ctgctggcga	acggcagaat	gcctaccgtg	ctgcagtgcg	tgaacgtgtc	ggtggtgtct	420
gaggaggtct	gcagtaagct	ctatgaccg	ctgtaccacc	ccagcatgtt	ctgcgccggc	480
ggagggcaag	accagaagga	ctcctgcaac	ggtgactctg	ggggggcccc	gatctgcaac	540
gggtacttgc	agggccttgt	gtctttcgga	aaagccccgt	gtggccaagt	tggcgtgcca	600
ggtgtctaca	ccaacctctg	caaattcact	gagtggatag	agaaaaccgt	ccaggccagt	660
taactctggg	gactgggaac	ccatgaaatt	gacccccaaa	tacatcctgc	ggaaggaatt	720
caggaatatc	tgttcccagc	ccctcctccc	tcaggcccag	gagtccaggc	ccccagcccc	780
tcctccctca	aaccaagggt	acagatcccc	agccccctct	ccctcagacc	caggagtcca	840
gacccccag	ccccctctcc	ctcagacc	ggagtccagc	ccctcctccc	tcagaccag	900
gagtccagac	ccccagccc	ctcctccctc	agaccaggg	gtccaggccc	ccaaccctc	960
ctccctcaga	ctcagagg	caagccccca	acccctcctt	ccccagacc	agaggtccag	1020
gtcccagccc	ctcctccctc	agaccagcg	gtccaatgcc	acctagactc	tccctgtaca	1080
cagtgcctcc	ttgtggcacg	ttgacccaac	cttaccagtt	ggtttttcat	tttttgtccc	1140
tttcccttag	atccagaaat	aaagtctaag	agaagcgcaa	aaaaaaaaaa	aaaaaaaaaa	1200
aaaaaaaaaa	aaaa					1214

<210> 226

<211> 119

<212> DNA

<213> Homo sapien

<400> 226

accagtatg	tgaggggaga	cggaacccca	tgtgacagcc	cactccacca	gggttcccaa	60
agaacctggc	ccagtcataa	tcattcatcc	tgacagtggc	aataatcacg	ataaccagt	119

<210> 227

<211> 818

<212> DNA

<213> Homo sapien

<400> 227

acaattcata	gggacgacca	atgaggacag	ggaatgaacc	cggctctccc	ccagccctga	60
tttttgctac	atatggggtc	ccttttcatt	ctttgcaaaa	acactgggtt	ttctgagaac	120
acggacggtt	cttagcacia	tttgtgaaat	ctgtgtaraa	ccgggctttg	caggggagat	180
aattttcctc	ctctggagga	aaggtggtga	ttgacaggca	gggagacagt	gacaaggcta	240
gagaaaagcca	cgctcggcct	tctctgaacc	aggatggaac	ggcagacccc	tgaaaacgaa	300
gctttgtcccc	ttccaatcag	ccacttctga	gaaccccat	ctaacttctt	actggaaaag	360
agggcctcct	caggagcagt	ccaagagttt	tcaaagataa	cgtgacaact	accatctaga	420
ggaaaagggtg	caccctcagc	agagaagccg	agagcttaac	tctggtcggt	tccagagaca	480
acctgctggc	tgtcttggga	tgcgcccagc	ctttgagagg	ccactacccc	atgaacttct	540
gccatccact	ggacatgaag	ctgaggacac	tgggcttcaa	cactgagttg	tcatgagagg	600
gacaggctct	gccttcaagc	cggctgaggg	cagcaaccac	tctcctcccc	tttctcacgc	660
aaagccattc	ccacaaatcc	agaccatacc	atgaagcaac	gagacccaaa	cagtttggct	720
caagaggata	tgaggactgt	ctcagcctgg	ctttgggctg	acaccatgca	cacacacaag	780
gtccacttct	aggttttcag	cctagatggg	agtcgtgt			818

<210> 228

<211> 744

<212> DNA

<213> Homo sapien

<400> 228

actggagaca	ctgttgaact	tgatcaagac	ccagaccacc	ccagggtctcc	ttcgtgggat	60
gtcatgacgt	ttgacatacc	tttggaacga	gcctcctcct	tgggaagatgg	aagaccgtgt	120
tcgtggccga	cctggcctct	cctggcctgt	ttcttaagat	gcggagtcac	atttcaatgg	180
taggaaaagt	ggcttcgtaa	aatagaagag	cagtcactgt	ggaactacca	aatggcgaga	240
tgctcggtgc	acattggggg	gctttgggat	aaaagattta	tgagccaact	attctctggc	300
accagattct	aggccagttt	gttccactga	agcttttccc	acagcagtcc	acctctgcag	360
gctggcagct	gaatggcttg	ccggtggctc	tgtggcaaga	tcacactgag	atcgatgggt	420
gagaaggcta	ggatgcttgt	ctagtgttct	tagctgtcac	gttggctcct	tccaggttgg	480
ccagacgggtg	ttggccactc	ccttctaaaa	cacaggcgcc	ctcctgggtga	cagtgacccg	540
ccgtgggtatg	ccttggccca	ttccagcagt	cccagttatg	catttcaagt	ttgggggttg	600
ttcttttcgt	taatgttctt	ctgtgttgtc	agctgtcttc	atttctctggg	ctaagcagca	660
ttgggagatg	tggaccagag	atccactcct	taagaaccag	tggcgaaaga	cactttcttt	720
cttcactctg	aagtagctgg	tggt				744

<210> 229

<211> 300

<212> DNA

<213> Homo sapien

<400> 229

cgagtctggg	ttttgtctat	aaagtttgat	ccctcctttt	ctcatccaaa	tcatgtgaac	60
cattacacat	cgaaataaaa	gaaaggtggc	agacttgccc	aacgccaggc	tgacatgtgc	120
tgcagggttg	ttgtttttta	attattattg	ttagaaacgt	cacccacagt	ccctgttaat	180
ttgtatgtga	cagccaactc	tgagaaggtc	ctattttttc	acctgcagag	gatccagtct	240
cactaggctc	ctccttgccc	tcacactgga	gtctccgcca	gtgtgggtgc	ccactgacat	300

<210> 230

<211> 301

<212> DNA

<213> Homo sapien

<400> 230

cagcagaaca	aatacaaaata	tgaagagtgc	aaagatctca	taaaatctat	gctgaggaat	60
gagcgacagt	tcaaggagga	gaagcttgca	gagcagctca	agcaagctga	ggagctcagg	120

caatataaag tcctggttca cactcaggaa cgagagctga cccagttaag ggagaagttg 180
 cgggaaggga gagatgcctc cctctcattg aatgagcatc tccaggccct cctcactccg 240
 gatgaaccgg acaagtccca ggggcaggac ctccaagaaa cagacctcgg ccgcgaccac 300
 g 301

<210> 231
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 231
 gcaagcacgc tggcaaactc ctgtcaggtc agctccagag aagccattag tcatttttagc 60
 caggaactcc aagtccacat ccttggcaac tggggacttg cgcagggttag ccttgaggat 120
 ggcaacacgg gactttctcat caggaagtgg gatgtagatg agctgatcaa gacggccagg 180
 tctgaggatg gcaggatcaa tgatgtcagg ccggttggtta ccgccaatga tgaacacatt 240
 tttttttgtg gacatgccat ccatttctgt caggatctgg ttgatgactc ggtcagcagc 300
 c 301

<210> 232
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 232
 agtaggtatt tcgtgagaag ttcaacacca aaactggaac atagttctcc ttcaagtgtt 60
 ggcgacagcg gggcttcctg attctggaat ataactttgt gtaaattaac agccacctat 120
 agaagagtcc atctgctgtg aaggagagac agagaactct ggggtccgctc gtcctgtcca 180
 cgtgctgtac caagtgtctg tgccagcctg ttacctgttc tcaactgaaa tctgggcta 240
 gctcttgtgt atcacttctg attctgacaa tcaatcaatc aatggcctag agcactgact 300
 g 301

<210> 233
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 233
 atgactgact tcccagtaag gctctctaag gggtaagtag gaggatccac aggatttgag 60
 atgctaaggc cccagagatc gtttgatcca accctcttat ttccagaggg gaaaatgggg 120
 cctagaagtt acagagcatc tagctgggtg gctggcacc cttggcctcac acagactccc 180
 gagtagctgg gactacaggc acacagtcac tgaagcaggc cctgttagca attctatgcg 240
 taaaaattaa catgagatga gtagagactt tattgagaaa gcaagagaaa atcctatcaa 300
 c 301

<210> 234
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 234
 aggtcctaca catcgagact catccatgat tgatatgaat ttaaaaaatta caagcaaaga 60
 cattttattc atcatgatgc tttcttttgt ttcttctttt cgttttcttc tttttctttt 120
 tcaatttcag caacatactt ctcaatttct tcaggattta aaatcttgag ggattgatct 180
 cgcctcatga cagcaagttc aatgtttttg ccacctgact gaaccacttc caggagtgcc 240
 ttgatcacca gcttaatggc cagatcatct gcttcaatgg cttcgtcagt atagttcttc 300

t

301

<210> 235
 <211> 283
 <212> DNA
 <213> Homo sapien

<400> 235

tggggctgtg catcaggcgg gtttgagaaa tattcaattc tcagcagaag ccagaatttg	60
aattccctca tcttttaggg aatcatttac caggtttgga gaggattcag acagctcagg	120
tgctttcact aatgtctctg aacttctgtc cctctttgtt catggatagt ccaataaata	180
atgttatctt tgaactgatg ctcataggag agaataaag aactctgagt gatatcaaca	240
ttaggggattc aaagaaatat tagattttaag ctcacactgg tca	283

<210> 236
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 236

aggtcctcca ccaactgcct gaagcacggg taaaattggg aagaagtata gtgcagcata	60
aatactttta aatcgatcag atttccctaa cccacatgca atcttcttca ccagaagagg	120
tcggagcagc atcattaata ccaagcagaa tgcgtaatat ataaatacaa tggatatatag	180
tgggtagacg gcttcatgag tacagtgtac tgtggtagcg taatctggac ttgggttgta	240
aagcatcgtg taccagtcag aaagcatcaa tactcgacat gaacgaatat aaagaacacc	300
a	301

<210> 237
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 237

cagtggtagt ggtgggtggac gtggcggttg tcgtgggtgcc ttttttggtg cccgtcacaa	60
actcaatttt tgttcgctcc tttttggcct tttccaattt gtccatctca attttctggg	120
ccttggctaa tgcctcatag taggagtcct cagaccagcc atgggggatca aacatatacct	180
ttgggtagtt ggtgccaagc tcgtcaatgg cacagaatgg atcagcttct cgtaaatcta	240
gggttccgaa attctttctt cctttggata atgtagttca tatccattcc ctcctttatc	300
t	301

<210> 238
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 238

gggcagggtt tttttttttt ttttttgatg gtgcagaccc ttgctttatt tgtctgactt	60
gttcacagtt cagccccctg ctccagaaaac caacggggcca gctaaggaga ggaggaggca	120
ccttgagact tccggagtcg aggcctctcca ggggtcccca gcccatcaat cattttctgc	180
acccccctgcc tgggaagcag ctccctgggg ggtgggaatg ggtgactaga agggatttca	240
gtgtgggacc cagggtctgt tcttcacagt aggaggtgga agggatgact aattttcttta	300
t	301

<210> 239
 <211> 239

<212> DNA

<213> Homo sapien

<400> 239

ataagcagct aggggaattct ttatttagta atgtcctaac ataaaaagttc acataactgc	60
ttctgtcaaa ccatgatact gagctttgtg acaacccaga aataactaag agaaggcaaa	120
cataatacct tagagatcaa gaaacattta cacagttcaa ctgtttaaaa atagctcaac	180
attcagccag tgagtagagt gtgaatgccg gcatacacag tatacagggtc cttcaggga	239

<210> 240

<211> 300

<212> DNA

<213> Homo sapien

<400> 240

ggtcctaattg aagcagcagc ttccacattt taacgcaggt ttacgggtgat actgtccttt	60
gggatctgcc ctccagtggg accttttaag gaagaagtgg gcccaagcta agttccacat	120
gctgggtgag ccagatgact tctgttccct ggtcactttc ttcaatgggg cgaatggggg	180
ctgccaggtt tttaaaatca tgcttcatct tgaagcacac ggtcacttca cctcctcac	240
gctgtgggtg tactttgatg aaaataccca ctttgttggc ctttctgaag ctataatgtc	300

<210> 241

<211> 301

<212> DNA

<213> Homo sapien

<400> 241

gagggtctggt gctgaggtct ctgggctagg aagaggagtt ctgtggagct ggaagccaga	60
cctctttgga ggaaactcca gcagctatgt tgggtgtctct gaggggaatgc aacaaggctg	120
ctcctccatg tattggaaaa ctgcaaactg gactcaactg gaaggaagtg ctgctgccag	180
tgtgaagaac cagcctgagg tgacagaaac ggaagcaaac aggaacagcc agtcttttct	240
tctcctcct gtcatacggg ctctctcaag catcctttgt tgtcaggggc ctaaaaggga	300
g	301

<210> 242

<211> 301

<212> DNA

<213> Homo sapien

<400> 242

ccgaggtcct gggatgcaac caatcactct gtttcacgtg acttttatca ccatacaatt	60
tgtggcattt cctcattttc tacattgtag aatcaagagt gtaaataaat gtatatcgat	120
gtcttcaaga atatatcatt cttttttcac tagaaccat tcaaaatata agtcaagaat	180
cttaatatca acaaatatat caagcaaact ggaaggcaga ataactacca taatttagta	240
taagtaccca aagttttata aatcaaaagc cctaattgata accattttta gaattcaatc	300
a	301

<210> 243

<211> 301

<212> DNA

<213> Homo sapien

<400> 243

aggtaagtcc cagtttgaag ctcaaaagat ctggtatgag cataggctca tcgacgacat	60
ggtggcccaa gctatgaaat cagagggagg cttcatctgg gcctgtaaaa actatgatgg	120

tgacgtgcag tcggactctg tggcccaagg gtatggctct ctccggcatga tgaccagcgt 180
 gctggtttgt ccagatggca agacagtaga agcagaggct gcccacggga ctgtaacccg 240
 tcaactaccgc atgttccaga aaggacagga gacgtccacc aatcccattg cttccatttt 300
 t 301

<210> 244
 <211> 300
 <212> DNA
 <213> Homo sapien

<400> 244
 gctggtttgc aagaatgaaa tgaatgattc tacagctagg acttaacctt gaaatggaaa 60
 gtcattgcaat cccatttgca ggatctgtct gtgcacatgc ctctgtagag agcagcattc 120
 ccagggacct tggaaacagt tgacactgta aggtgcttgc tccccaagac acatcctaaa 180
 aggtgttcta atggtgaaaa cgtcttcctt ctttattgcc ctttcttatt tatgtgaaca 240
 actgtttgtc ttttgtgtat cttttttaa ctgtaaagtt caattgtgaa aatgaatatt 300

<210> 245
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 245
 gtctgagtat ttaaaatgtt attgaaatta tccccaacca atgttagaaa agaaagaggt 60
 tatatactta gataaaaaat gaggtgaatt actatccatt gaaatcatgc tcttagaatt 120
 aaggccagga gatattgtca ttaatgtara cttcaggaca ctagagtata gcagccctat 180
 gttttcaaag agcagagatg caattaaata ttgttttagca tcaaaaaggc cactcaatac 240
 agctaataaa atgaaagacc taattttctaa agcaattctt tataattttac aaagttttta 300
 g 301

<210> 246
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 246
 ggtctgtcct acaatgcctg cttcttgaaa gaagtcggca ctttctagaa tagctaaata 60
 acctgggctt attttaaaga actatttgta gctcagattg gttttcctat ggctaaaata 120
 agtgcttctt gtgaaaatta aataaaacag ttaattcaaa gccttgatat atgttaccac 180
 taacaatcat actaaatata ttttgaagta caaagtttga catgctctaa agtgacaacc 240
 caaatgtgtc ttacaaaaca cgttcctaac aaggtatgct ttacactacc aatgcagaaa 300
 c 301

<210> 247
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 247
 aggtcctttg gcagggtcga tggatcagag ctcaaactgg agggaaaggc atttcgggta 60
 gcctaagagg gcgactggcg gcagcacaac caaggaaggc aaggttgttt cccccacgct 120
 gtgtcctgtg ttcagggtgcg acacacaatc ctcatgggaa caggatcacc catgcgctgc 180
 ccttgatgat caaggttggg gcttaagtgg attaagggag gcaagttctg ggttccttgc 240
 cttttcaaac catgaagtca ggctctgtat ccctcctttt cctaactgat attctaacta 300
 a 301

<210> 248
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 248
 aggtccttgg agatgccatt tcagccgaag gactcttctw ttcggaagta caccctcact 60
 attaggaaga ttcttagggg taatttttct gaggaaggag aactagccaa cttagaatt 120
 acaggaagaa agtggtttgg aagacagcca aagaaataaa agcagattaa attgtatcag 180
 gtacattcca gcctgttggc aactccataa aaacatttca gattttaatc ccgaatttag 240
 ctaatgagac tggatttttg ttttttatgt tgtgtgtcgc agagctaaaa actcagttcc 300
 c 301

<210> 249
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 249
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 ccctgacgct gctgttctcc ccgaaaaacc cgaccgacct ccgcgatctc cgtecccgccc 120
 ccagggagac acagcagtga ctcagagctg gtcgcacact gtgcctccct cctcacggcc 180
 catcgtaatg aattattttg aaaattaatt ccaccatcct ttcagattct ggatggaaag 240
 actgaatcct tgactcagaa ttgtttgctg aaaagaatga tgtgacttct ttagtcattt 300
 a 301

<210> 250
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 250
 ggtctgtgac aaggacttgc aggctgtggg aggcaagtga cccttaacac tacacttctc 60
 cttatcttta ttggcttgat aaacataatt atttctaaca ctagcttatt tccagttgcc 120
 cataagcaca tcagtacttt tctctggctg gaatagtaaa ctaaagtatg gtacatctac 180
 ctaaaagact actatgtgga ataatacata ctaatgaagt attacatgat ttaaagacta 240
 caataaaacc aaacatgctt ataacattaa gaaaaacaat aaagatacat gattgaaacc 300
 a 301

<210> 251
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 251
 gccgaggtcc tacatttggc ccagtttccc cctgcattct ctccaggggc cctgcctcat 60
 agacaacctc atagagcata ggagaactgg ttgccctggg ggcaggggga ctgtctggat 120
 ggcaggggtc ctcaaaaatg ccactgtcac tgccaggaaa tgcttctgag cagtacacct 180
 cattgggatc aatgaaaagc ttcaagaaat cttcaggctc actctcttga aggcccgga 240
 cctctggagg ggggcagtgg aatcccagct ccaggacgga tcctgtcgaa aagatatcct 300
 c 301

<210> 252
 <211> 301

<212> DNA

<213> Homo sapien

<400> 252

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gcaaccaatc actctgtttc acgtgacttt tatcaccata caatttgtgg catttcctca      60
ttttctacat tgtagaatca agagtgtaaa taaatgtata tcgatgtctt caagaatata      120
tcatttccttt ttcactagga acccattcaa aatataagtc aagaatctta atatcaacaa      180
atatatcaag caaactggaa ggcagaataa ctaccataat ttagtataag tacccaaagt      240
tttataaatc aaaagcccta atgataacca tttttagaat tcaatcatca ctgtagaatc      300
a                                                                                   301

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<210> 253

<211> 301

<212> DNA

<213> Homo sapien

<400> 253

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ttccctaaga agatgttatt ttgttgggtt ttgttcccc tccatctcga ttctcgtacc      60
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tggtctgatt gttttcagac cttaaaatat aaacttgttt cacaagcttt aatccatgtg      180
gatttttttt cttagagaac cacaaaacat aaaaggagca agtcggactg aatacctgtt      240
tccatagtgc ccacagggta ttcctcacat tttctccata ggaaaatgct ttttcccaag      300
g                                                                                   301

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<210> 254

<211> 301

<212> DNA

<213> Homo sapien

<400> 254

```

cgctgcgcct ttcccttggg ggagggggcaa ggccagaggg ggtccaagtg cagcacgagg      60
aacttgacca attcccttga agcgggtggg ttaaaccctg taaatgggaa caaaatcccc      120
ccaaatctct tcatcttacc ctggtggact cctgactgta gaattttttg gttgaaacaa      180
gaaaaaaaata agcttttggg cttttcaagg ttgcttaaca ggtactgaaa gactggcctc      240
acttaaaactg agccaggaaa agctgcagat ttattaatgg gtgtgttagt gtgcagtgcc      300
t                                                                                   301

```

<210> 255

<211> 302

<212> DNA

<213> Homo sapien

<400> 255

```

agcttttttt tttttttttt tttttttttt ttcattaaaa aatagtgtct tttattataa      60
attactgaaa tgtttctttt ctgaatataa atataaatat gtgcaaagtt tgacttggat      120
tggtgatttt ttgagttctt caagcatctc ctaataccct caagggcctg agtagggggg      180
aggaaaaagg actggaggtg gaatctttat aaaaaacaag agtgattgag gcagattgta      240
aacattatta aaaaacaaga aacaaacaaa aaaaatagaga aaaaaccac cccaacacac      300
aa                                                                                   302

```

<210> 256

<211> 301

<212> DNA

<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 256
 gttccagaaa acattgaagg tggcttccca aagtctaact agggatcccc cctctagcct 60
 aggaccctcc tccccacacc tcaatccacc aaaccatcca taatgcaccc agataggccc 120
 acccccacaaa gcctggacac cttgagcaca cagttatgac caggacagac tcatctctat 180
 aggcaaatac ctgctggcaa actggcatta cctgggttgt ggggatgggg gggcaagtgt 240
 gtggcctctc ggctgggta gcaagaacat tcagggtagg cctaagttan tcgtgttagt 300
 t 301

<210> 257
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 257
 gttgtggagg aactctggct tgctcattaa gtcctactga ttttccactat cccctgaatt 60
 tccccactta tttttgtctt tcactatcgc aggccttaga agaggtctac ctgcctccag 120
 tcttacctag tccagtctac cccctggagt tagaatggcc atcctgaagt gaaaagtaat 180
 gtcacattac tcccttcagt gatctctgt agaagtgcc atccctgaat gccaccaaga 240
 tcttaatctt cacatcttta atcttatctc ttgactcct ctttacaccg gagaaggctc 300
 c 301

<210> 258
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 258
 cagcagtagt agatgccgta tgccagcacg cccagcactc ccaggatcag caccagcacc 60
 agggggccag ccaccaggcg cagaagcaag ataaacagta ggctcaagac cagagccacc 120
 cccagggcaa caagaatcca ataccaggac tgggcaaaat cttcaaagat cttaacactg 180
 atgtctcggg cattgaggct gtcaataana cgctgatccc ctgctgtatg gtggtgtcat 240
 tggtgatccc tgggagcgcc ggtggagtaa cgttgggtcca tggaaagcag cgcccacaac 300
 t 301

<210> 259
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 259

```

tcatatatgc aaacaaatgc agactangcc tcaggcagag actaaaggac atctcttggg      60
gtgtcctgaa gtgatttgga cccctgaggg cagacaccta agtaggaatc ccagtgggaa      120
gcaaagccat aaggaagccc aggattcctt gtgatcagga agtgggcccag gaaggctctgt      180
tccagctcac atctcatctg catgcagcac ggaccggatg cggccactgg gtcttggctt      240
ccctcccatc ttctcaagca gtgtccttgt tgagccattt gcctccttgg ctccaggtgg      300
c                                                                    301

```

```

<210> 260
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 260
ttttttttct ccctaaggaa aaagaaggaa caagtctcat aaaaccaa at aagcaatgg      60
aagggtgtctt aacttgaaaa agattaggag tctctgggtt acaagttata attgaatgaa      120
agaactgtaa cagccacagt tggccatttc atgccaatgg cagcaaacia caggattaac      180
tagggcaaaa taaataagtg tgtggaagcc ctgataagtg ctttaataaac agactgattc      240
actgagacat cagtacctgc ccgggcggcc gctcgagccg aattctgcag atatccatca      300
c                                                                    301

```

```

<210> 261
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 261
aaatattcga gcaaattcctg taactaatgt gtctccataa aaggctttga actcagtgaa      60
tctgcttcca tccacgattc tagcaatgac ctctcggaca tcaaagctcc tcttaagggt      120
agcaccaact attccataca attcatcagc aggaaataaa ggctcttcag aagggttcaat      180
ggtgacatcc aatttcttct gataatttag attcctcaca accttcctag ttaagtgaag      240
ggcatgatga tcatccaaag ccagtggtc atttactcca gactttctgc aatgaagatc      300
a                                                                    301

```

```

<210> 262
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 262
gaggagagcc tgttacagca tttgtaagca cagaatactc caggagtatt tgtaattgtc      60
tgtgagcttc ttgccgcaag tctctcagaa atttaaaaag atgcaaatcc ctgagtcacc      120
cctagacttc ctaaaccaga tctctggggg ctggaacctg gcaactctgca tttgtaatga      180
gggctttctg gtgcacacct aattttgtgc atctttgccc taaatcctgg attagtgtcc      240
catcattacc cccacattat aatgggatag attcagagca gatactctcc agcaaagaat      300
c                                                                    301

```

```

<210> 263
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

```

<400> 263

tttagcttgt	ggtaaagtac	tcacaaaact	gatttttaaaa	tcaagttaat	gtgaattttg	60
aaaattacta	cttaataccta	attcacata	acaatggcat	taaggtttga	cttgagttgg	120
ttcttagtat	tatttatggg	aaataggctc	ttaccacttg	caaataactg	gccacatcat	180
taatgactga	cttcccagta	aggctctcta	aggggtaagt	angaggatcc	acaggatttg	240
agatgctaag	gccccagaga	tcgtttgatc	caaccctctt	attttcagag	gggaaaatgg	300
g						301

<210> 264

<211> 301

<212> DNA

<213> Homo sapien

<400> 264

aaagacgtta	aaccactcta	ctaccacttg	tggaactctc	aaagggtaaa	tgacaaascc	60
aatgaatgac	tctaaaaaca	atattttacat	ttaatggttt	gtagacaata	aaaaaacaag	120
gtggatagat	ctagaattgt	aacattttta	gaaaaccata	scatttgaca	gatgagaaaag	180
ctcaattata	gatgcaaagt	tataactaaa	ctactatagt	agtaaagaaa	tacatttcac	240
acccttcata	taaattcact	atcttggtct	gaggcactcc	ataaaatgta	tcacgtgcat	300
a						301

<210> 265

<211> 301

<212> DNA

<213> Homo sapien

<400> 265

tgccccagtt	atgtgtaagt	gtatccgcac	ccagaggtaa	aactacactg	tcattcttct	60
cttcttgtga	cgcagtattt	cttctctggg	gagaagccgg	gaagtcttct	cctggctcta	120
catattcttg	gaagtctcta	atcaactttt	gttccatttg	tttcatttct	tcaggaggga	180
ttttcagttt	gtcaacatgt	tctctaacia	cacttgccca	tttctgtaaa	gaatccaaag	240
cagtccaagg	ctttgacatg	tcaacaacca	gcataactag	agtatccttc	agagatacgg	300
c						301

<210> 266

<211> 301

<212> DNA

<213> Homo sapien

<400> 266

taccgtctgc	ccttctctcc	atccaggcca	tctgcgaatc	tacatgggtc	ctcctattcg	60
acaccagatc	actctttcct	ctaccacag	gcttgctatg	agcaagagac	acaacctcct	120
ctcttctgtg	ttccagcttc	ttttcctggt	cttcccaccc	cttaagttct	attcctgggg	180
atagagacac	caatacccat	aacctctctc	ctaagcctcc	ttataacca	gggtgcacag	240
cacagactcc	tgacaactgg	taaggccaat	gaactgggag	ctcacagctg	gctgtgcctg	300
a						301

<210> 267

<211> 301

<212> DNA

<213> Homo sapien

<400> 267

aaagagcaca	ggccagctca	gcctgccctg	gccatctaga	ctcagcctgg	ctccatgggg	60
------------	------------	------------	------------	------------	------------	----

```

gtttctcagtg ctgagtcctat ccaggaaaag ctcacctaga ctttctgagg ctgaatcttc      120
atcctcacag gcagcttctg agagcctgat attcctagcc ttgatgggtct ggagtaaagc      180
ctcattctga ttctctctct tcttttcttt caagttggct ttctcacat ccctctgttc      240
aattcgcttc agcttgtctg ctttagccct catttccaga agcttcttct ctttggcatc      300
t                                                                                   301

```

```

<210> 268
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 268
aatgtctcac tcaactactt cccagcctac cgtggcctaa ttctgggagt tttcttctta      60
gatcttggga gagctgggtc ttctaaggag aaggaggaag gacagatgta actttggatc      120
tcgaagagga agtctaattg aagtaattag tcaacgggtc ttgtttagac tcttgggaata      180
tgctgggtgg ctcagtgagc ctttttggag aaagcaagta ttattcttaa ggagtaacca      240
cttcccattg ttctactttc taccatcatc aattgtatat tatgtattct ttggagaact      300
a                                                                                   301

```

```

<210> 269
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 269
taacaatata cactagctat ctttttaact gtccatcatt agcaccaatg aagattcaat      60
aaaattacct ttattcacac atctcaaaac aattctgcaa attcttagtg aagtttaact      120
atagtcacag accttaaata ttcacattgt tttctatgtc tactgaaaat aagttcacta      180
cttttctgga tattctttac aaaatcttat taaaattcct ggtattatca cccccaatta      240
tacagtagca caaccacctt atgtagtttt tacatgatag ctctgtagaa gtttcacatc      300
t                                                                                   301

```

```

<210> 270
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 270
cattgaagag cttttgcgaa acatcagaac acaagtgctt ataaaaattaa ttaagcctta      60
cacaagaata catattcctt ttattttctaa ggagttaaac atagatgtag ctgatgtgga      120
gagcttgctg gtgcagtgca tattggataa cactattcat ggccgaattg atcaagtcaa      180
ccaactcctt gaactggatc atcagaagaa ggggtggtgca cgatatactg cactagataa      240
tggaaccaacc aactaaattc tctcaccagg ctgtatcagt aaactggctt aacagaaaac      300
a                                                                                   301

```

```

<210> 271
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

```

<400> 271

```

aaaagggttct cataagatta acaattttaa taaatatttg atagaacatt ctttctcatt    60
tttatagctc atcttttaggg ttgatattca gttcatgctt cccttgctgt tcttgatcca    120
gaattgcaat cacttcatca gcctgtattc gctccaattc tctataaagt ggggtccaagg    180
tgaaccacag agccacagca cacctcttcc ccttggtgac tgccttcacc ccatganggt    240
tctctcctcc agatganaac tgatcatgcg cccacatttt gggttttata gaagcagtca    300
c                                                                    301

```

<210> 272

<211> 301

<212> DNA

<213> Homo sapien

<400> 272

```

taaattgcta agccacagat aacaccaatc aaatggaaca aatcactgtc ttcaaagtgc    60
ttatcagaaa accaaatgag cctggaatct tcataatacc taaacatgcc gtatttagga    120
tccaataatt ccctcatgat gagcaagaaa aattctttgc gcacccctcc tgcattccaca    180
gcatcttctc caacaaatat aaccttgagt ggcttcttgt aatctatgtt ctttgttttc    240
ctaaggactt ccattgcac tcctacaata ttttctctac gcaccactag aattaagcag    300
g                                                                    301

```

<210> 273

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 273

```

acatgtgtgt atgtgtatct ttgggaaaaa aanaagacat cttgtttayt atttttttgg    60
agagangctg ggacatggat aatcacwtaa tttgctayta tyactttaat ctgactygaa    120
gaaccgtcta aaaataaaaat ttaccatgtc dtatattcct tatagtatgc ttatttcacc    180
ttytttctgt ccagagagag tatcagtgac ananatttma ggggtgaamac atgmattggg    240
gggacttnty tttacngagm accctgcccg sgcgccctcg makengantt ccgcsananc    300
t                                                                    301

```

<210> 274

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 274

```

cttatatact ctttctcaga ggcaaaagag gagatgggta atgtagacaa ttctttgagg    60
aacagtaaat gattattaga gagaangaat ggaccaagga gacagaaatt aacttgtaaa    120
tgattctctt tggaatctga atgagatcaa gaggccagct ttagcttggt gaaaagtcca    180
tctaggtatg gttgcattct cgtcttcttt tctgcagtag ataatgaggt aaccgaaggc    240
aattgtgctt cttttgataa gaagctttct tggtcatatc aggaaattcc aganaaagtc    300

```


c

301

<210> 275
 <211> 301
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 275

tcggtgtcag	cagcacgtgg	cattgaacat	tgcaatgtgg	agcccaaacc	acagaaaatg	60
gggtgaaatt	ggccaacttt	ctattaactt	atgttggcaa	ttttgccacc	aacagtaagc	120
tggcccttct	aataaaaagaa	aattgaaagg	tttctcacta	aacggaatta	agtagtggag	180
tcaagagact	cccaggcctc	agcgtacctg	cccgggcggc	cgctcgaagc	cgaattctgc	240
agatatccat	cacactggcg	gncgctcgan	catgcatcta	gaaggnccaa	ttcgccctat	300
a						301

<210> 276
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 276

tgtacacata	ctcaataaat	aaatgactgc	atttgtggtat	tattactata	ctgattatat	60
ttatcatgtg	acttctaatt	agaaaaatgta	tccaaaagca	aaacagcaga	tatacaaaat	120
taaagagaca	gaagatagac	attaacagat	aaggcaactt	atacattgag	aatccaaatc	180
caatacatTT	aaacatttgg	gaaatgaggg	ggacaaatgg	aagccagatc	aaatttgtgt	240
aaaactattc	agtatgtttc	ccttgcttca	tgtctgagaa	ggctctcctt	caatggggat	300
g						301

<210> 277
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 277

tttgttgatg	tcagtatttt	attacttgcg	ttatgagtgc	tcacctggga	aattctaaag	60
atacagagga	cttggaggaa	gcagagcaac	tgaatttaat	ttaaaagaag	gaaaacattg	120
gaatcatggc	actcctgata	ctttcccaaa	tcaacactct	caatgcccc	ccctcgctct	180
caccatagtg	gggagactaa	agtggccacg	gatttgctct	angtgtgcag	tgcgttctga	240
gttcnctgtc	gattacatct	gaccagtctc	ctttttccga	agtcntccg	ttcaatcttg	300
c						301

<210> 278
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 278
 taccactaca ctccagcctg ggcaacagag caagacctgt ctcaaagcat aaaatggaat 60
 aacatatcaa atgaaacagg gaaaatgaag ctgacaattt atggaagcca gggcttgtca 120
 cagtctctac tgttattatg cattacctgg gaatttatat aagcccttaa taataatgcc 180
 aatgaacatc tcatgtgtgc tcacaatggt ctggcactat tataagtgtc tcacagggtt 240
 tatgtgttct tcgtaacttt atggantagg tactcggccg cgaacacgct aagccgaatt 300
 c 301

<210> 279
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 279
 aaagcaggaa tgacaaagct tgcttttctg gtatgttcta ggtgtattgt gacttttact 60
 gttatattaa ttgccaatat agtaaatat agattatata tgtatagtgt ttcacaaagc 120
 ttagaccttt accttccagc caccacacag tgcttgatat ttcagagtca gtcattgggt 180
 atacatgtgt agttccaaaag cacataagct agaanaanaa atatttctag ggagcactac 240
 catctgtttt cacatgaaat gccacacaca tagaactcca acatcaattt cattgcacag 300
 a 301

<210> 280
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 280
 ggtactggag ttttcctccc ctgtgaaaac gtaactactg ttgggagtga attgaggatg 60
 tagaaagggt gtggaaccaa attgtggtca atggaaatag gagaatatgg ttctcactct 120
 tgagaaaaaa acctaaagatt agcccaggta gttgcctgta acttcagttt ttctgcctgg 180
 gtttgatata gtttaggggt ggggttagat taagatctaa attacatcag gacaaagaga 240
 cagactatta actccacagt taattaagga ggtatgttcc atgtttattt gttaaagcag 300
 t 301

<210> 281
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 281
 aggtacaaga aggggaatgg gaaagagctg ctgctgtggc attgttcaac ttggatatcc 60
 gccgagcaat ccaaatcctg aatgaagggg catcttctga aaaaggagat ctgaatctca 120
 atgtggtagc aatggcttta tcgggttata cggtatgagaa gaactccctt tggagagaaa 180
 tgtgtagcac actgcgatta cagctaaata acccgatttt gtgtgtcatg ttgcatttc 240

tgacaagtga aacaggatct tacgatggag ttttgtatga aaacaaagtt gcagtacctc 300
g 301

<210> 282
<211> 301
<212> DNA
<213> Homo sapien

<400> 282
caggtactac agaattaaaa tactgacaag caagtagttt cttggcgtgc acgaattgca 60
tccagaaccc aaaaattaag aaattcaaaa agacattttg tgggcacctg ctagcacaga 120
agcgcagaag caaagcccag gcagaacat gctaacctta cagctcagcc tgcacagaag 180
cgcagaagca aagcccaggc agaaccatgc taaccttaca gctcagcctg cacagaagcg 240
cagaagcaaa gccccaggcag aacatgctaa ccttacagct cagcctgcac agaagcacag 300
a 301

<210> 283
<211> 301
<212> DNA
<213> Homo sapien

<400> 283
atctgtatac ggcagacaaa ctttatarag tgtagagagg tgagcgaaag gatgcaaaag 60
cactttgagg gctttataat aatattgtgc ttgaaaaaaa aaatgtgtag ttgatactca 120
gtgcatctcc agacatagta aggggttgct ctgaccaatc aggtgatcat tttttctatc 180
acttcccagg ttttatgcaa aaattttgtt aaattctata atggtgatat gcatctttta 240
ggaaacatat acatttttaa aaatctattt tatgtaagaa ctgacagacg aatttgcttt 300
g 301

<210> 284
<211> 301
<212> DNA
<213> Homo sapien

<400> 284
caggtacaaa acgctattaa gtggcttaga atttgaacat ttgtggtctt tatttacttt 60
gcttcgtgtg tgggcaaagc aacatcttcc cttaaataat attaccaaga aaagcaagaa 120
gcagattagg tttttgacaa acaaaacagg ccaaaagggg gctgacctgg agcagagcat 180
ggtgagaggc aaggcatgag agggcaagtt tgttgtggac agatctgtgc ctactttatt 240
actggagtaa aagaaaacaa agttcattga tgtcgaagga tatatacagt gttagaagaa 300
a 301

<210> 285
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 285
acatcaccat gatcgatcc cccaccatt atacgttgta tgtttacata aatactcttc 60
aatgatcatt agtgttttaa aaaaaatact gaaaactcct tctgcatccc aatctctaac 120

```

caggaaagca aatgctatTT acagacCTgc aagccCTccc tcaaacnaaa ctatTTctgg 180
attaaatatg tctgactTct tttgaggtca cacgactagg caaatgctat ttacgatctg 240
caaaagctgt ttgaagagtc aaagCCCCca tgtgaacacg atttctggac cctgtaacag 300
t 301

```

```

<210> 286
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 286
taccactgca ttccagcctg ggtgacagag tgagactccg tctccaaaaa aaactTTtgt 60
tgtatattat ttttgCctta cagtggatca ttctagtagg aaaggacagt aagattTTTT 120
atcaaaatgt gtcatgccag taagagatgt tatattCTtt tctcattTct tccccaccca 180
aaaataagct accatatagc ttataagtct caaatTTTTg ctttttacta aaatgtgatt 240
gtttctgttc attgtgtatg cttcatcacc tatattaggc aaattccatt ttttcccttg 300
t 301

```

```

<210> 287
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 287
tacagatctg ggaactaaat attaaaaatg agtgtggctg gatatatgga gaatgttggg 60
cccagaagga acgtagagat cagatattac aacagCTttg ttttgagggT tagaaatatg 120
aaatgatttg gttatgaacg cacagTTtag gcagcagggc cagaatCctg accctctgcc 180
ccgtgggtat ctctcCCca gcttggtctg ctcagtgtat cacagtattc catTTtgTTt 240
gttgcatgtc ttgtgaagcc atcaagattt tctcgtctgt tttcctctca ttggtaatgc 300
t 301

```

```

<210> 288
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 288
gtacacCTaa ctgcaaggac agctgaggaa tgtaatgggc agccgCTttt aaagaagtag 60
agtcaatagg aagacaaatt ccagttccag ctCagtctgg gtatctgcaa agctgcaaaa 120
gatCTtttaa gacaattTca agagaatatt tccttaaagt tggcaatttg gagatcatac 180
aaaagcatct gctTTtTgtga tttaatTTtag ctcatctggc cactggaaga atccaaacag 240
tctgcCTtaa ttttggaTga atgcatgatg gaaattcaat aatttagaaa gttaaaaaaa 300
a 301

```

```

<210> 289
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

```

```

<400> 289

```

```

ggtagactgt ttccatgta tgtttctaca cattgctacc tcagtgtcc tggaaactta      60
gcttttgatg tctccaagta gtccaccttc atttaactct ttgaaactgt atcatctttg    120
ccaagtaaga gtggtggcct atttcagctg ctttgacaaa atgactggct cctgacttaa     180
cgttctataa atgaatgtgc tgaagcaaag tgcccatggg ggcggcgaan aagagaaaga    240
tgtgtttgt tttggactct ctgtgggtccc ttccaatgct gtgggtttcc aaccagnnga    300
a                                                                           301

```

```

<210> 290
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

```

```

<400> 290
acactgagct cttcttgata aatatacaga atgcttggca tatacaagat tctatactac      60
tgactgatct gttcatttct ctcacagctc ttaccccaaa aagcttttcc accctaagtg    120
ttctgacctc cttttctaata cacagtaggg atagaggcag anccacctac aatgaacatg    180
gagttctatc aagaggcaga aacagcacag aatcccagtt ttaccattcg ctagcagtgc    240
tgccttgaac aaaaacattt ctccatgtct cattttcttc atgcctcaag taacagtgag    300
a                                                                           301

```

```

<210> 291
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 291
caggtacca tttcttctat cctagaaaca tttcatttta tgttggtgaa acataacaac      60
tatatcagct agattttttt tctatgcttt acctgctatg gaaaatttga cacattctgc    120
tttactcttt tgtttatagg tgaatcacia aatgtatttt tatgtattct gtagttcaat    180
agccatggct gtttacttca ttaattttat ttagcataaa gacattatga aaaggcctaa    240
acatgagctt cacttcccca ctaactaatt agcatctggt atttcttaac cgtaatgcct    300
a                                                                           301

```

```

<210> 292
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

```

```

<400> 292
accttttagt agtaatgtct aataataaat aagaaatcaa ttttataagg tccatatagc      60
tgtattaaat aatttttaag tttaaaagat aaaataccat cattttaaat gttgggtattc    120
aaaaccaaag natataaccg aaaggaaaaa cagatgagac ataaaatgat ttgcnagatg    180
ggaaatatag tastyatga atgttnatta aattccagtt ataatagtgg ctacacactc    240
tcactacaca cacagacccc acagtcctat atgccacaaa cacatttcca taacttgaaa    300
a                                                                           301

```

<210> 293
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 293
 ggtaccaagt gctgggtgcca gcctgttacc tgttctcact gaaaagtctg gctaattgctc 60
 ttgtgtagtc acttctgatt ctgacaatca atcaatcaat ggcctagagc actgactgtt 120
 aacacaaaacg tctactagcaa agtagcaaca gctttaagtc taaatacaaa gctgttctgt 180
 gtgagaattt tttaaaaaggc tacttgtata ataacccttg tcatttttaa tgtacctcgg 240
 ccgcgaccac gctaagccga attctgcaga tatccatcac actggcgggc gctcgagcat 300
 g 301

<210> 294
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 294
 tgaccataaa caatatacac tagctatctt tttaactgtc catcattagc accaatgaag 60
 attcaataaaa attaccttta ttcacacatc tcaaaaacaat tctgcaaatt cttagtgaag 120
 tttaactata gtcacaganc ttaaatattc acattgtttt ctatgtctac tgaaaataag 180
 ttactacttt ttctgggata ttctttacaa aatcttatta aaattcctgg tattatcacc 240
 cccaattata cagtagcaca accaccttat gtagttttta catgatagct ctgtagaggt 300
 t 301

<210> 295
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 295
 gtactctttc tctccctcc tctgaattta attctttcaa cttgcaattt gcaaggatta 60
 cacatttcac tgtgatgtat attgtgttgc aaaaaaaaaa gtgtctttgt ttaaaattac 120
 ttggtttgtg aatccatctt gctttttccc cattggaact agtcattaac ccatctctga 180
 actggtagaa aaacrtctga agagctagtc tatcagcatc tgacagggtga attggatggg 240
 tctcagaacc atttcacca gacagcctgt ttctatcctg tttaataaat tagtttgggt 300
 tctct 305

<210> 296
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 296
 aggtactatg ggaagctgct aaaataatat ttgatagtaa aagtatgtaa tgtgctatct 60
 cacctagtag taaactaaaa ataaactgaa actttatgga atctgaagtt attttccttg 120
 attaaataga attaataaac caatatgagg aaacatgaaa ccatgcaatc tactatcaac 180
 tttgaaaaag tgattgaacg aaccacttag ctttcagatg atgaacactg ataagtcatt 240

tgtcattact ataaatttta aaatctgtta ataagatggc ctatagggag gaaaaagggg 300
c 301

<210> 297
<211> 300
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(300)
<223> n = A,T,C or G

<400> 297
actgagtttt aactggacgc caagcaggca aggctggaag gttttgctct ctttgtgcta 60
aaggttttga aaaccttgaa ggagaatcat tttgacaaga agtacttaag agtctagaga 120
acaaagangt gaaccagctg aaagctctcg ggggaanctt acatgtgttg ttaggcctgt 180
tccatcattg ggagtgcact ggccatccct caaaatttgt ctgggctggc ctgagtggtc 240
accgcacctc ggccgcgacc acgctaagcc gaattctgca gatatccatc acactggcg 300

<210> 298
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 298
tatggggttt gtcacccaaa agctgatgct gagaaaggcc tccctggggc ccctcccgcg 60
ggcatctgag agacctggtg ttccagtgtt tctggaaatg ggtcccagtg ccgccggctg 120
tgaagctctc agatcaatca cgggaagggc ctggcggtgg tggccacctg gaaccaccct 180
gtcctgtctg tttacatttc actaycaggt tttctctggg cattacnatt tgttccccta 240
caacagtgc ctgtgcattc tgctgtggcc tgctgtgtct gcagggtggc ctcagcgagg 300
t 301

<210> 299
<211> 301
<212> DNA
<213> Homo sapien

<400> 299
gttttgagac ggagtttcac tcttgttgcc cagactggac tgcaatggca gggctctctgc 60
tcaactgcacc ctctgcctcc caggttcgag caattctcct gcctcagcct cccaggtagc 120
tgggattgca ggtcacgcc accataccca gctaattttt ttgtattttt agtagagacg 180
gagtttcgcc atgttggcca gctgggtctca aactcctgac ctcaagcgac ctgcctgcct 240
cggcctccca aagtgtgga attataggca tgagtcaaca cgccagcct aaagatat 300
t 301

<210> 300
<211> 301
<212> DNA
<213> Homo sapien

<400> 300

```

attcagtttt atttgcgtgcc ccagtatctg taaccaggag tgccacaaaa tcttgccaga      60
tatgtcccac acccactggg aaaggctccc acctggctac ttcctctatc agctgggtca      120
gctgcattcc acaaggttct cagcctaata agtttacta cctgccagtc tcaaaactta      180
gtaaagcaag accatgacat tccccacgg aaatcagagt ttgcccacc gtcttgttac      240
tataaagcct gcctctaaca gtccttgctt cttcacacca atcccagagc catcccccat      300
g                                                                                   301

```

<210> 301

<211> 301

<212> DNA

<213> Homo sapien

<400> 301

```

ttaaattttt gagaggataa aaaggacaaa taatctagaa atgtgtcttc ttcagtctgc      60
agaggacccc aggtctccaa gcaaccacat ggtcaagggc atgaataatt aaaagttggt      120
gggaactcac aaagaccctc agagctgaga caccacaac agtgggagct cacaaagacc      180
ctcagagctg agacaccac aacagtggga gtcacaaaag acctcagag ctgagacacc      240
cacaacagca cctcgttcag ctgccacatg tgtgaataag gatgcaatgt ccagaagtgt      300
t                                                                                   301

```

<210> 302

<211> 301

<212> DNA

<213> Homo sapien

<400> 302

```

aggtacacat ttagcttggt gtaaataact cacaactg attttaaaat caagttaatg      60
tgaattttga aaattactac ttaattcctaa ttcacaataa caatggcatt aaggtttgac      120
ttgagttggt tcttagtatt atttatggta aataggctct taccacttgc aaataactgg      180
ccacatcatt aatgactgac ttcccagtaa ggctctctaa ggggtaagta ggaggatcca      240
caggatttga gatgctaagg ccccagagat cgtttgatcc aaccctctta ttttcagagg      300
g                                                                                   301

```

<210> 303

<211> 301

<212> DNA

<213> Homo sapien

<400> 303

```

aggtaccaac tgtggaaata ggtagaggat cattttttct ttccatatca actaagttgt      60
atattgtttt ttgacagttt aacacatctt cttctgtcag agattctttc acaatagcac      120
tggctaattg aactaccgct tgcattgtaa aaatgggtgt ttgtgaaatg atcataggcc      180
agtaacgggt atgtttttct aactgatctt ttgctcgttc caaagggacc tcaagacttc      240
catcgatttt atatctgggg tctagaaaag gagttaatct gttttccctc ataaattcac      300
c                                                                                   301

```

<210> 304

<211> 301

<212> DNA

<213> Homo sapien

<400> 304

```

acatggatgt tattttgcag actgtcaacc tgaatttgta tttgcttgac attgcctaatt      60

```


tattagtttc agtttcagct taccacttt ttgtctgcaa catgcaraas agacagtgcc	120
cttttttagtg tatcatatca ggaatcatct cacattgggt tgtgccatta ctgggtgcagt	180
gacttttcagc cacttgggta aggtggagtt ggccatattgt ctccactgca aaattactga	240
ttttccctttt gtaattaata agtgtgtgtg tgaagattct ttgagatgag gtatatatct	300
c	301

<210> 305
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 305	
gangtacagc gtggtcaagg taacaagaag aaaaaaatgt gagtggcatc ctgggatgag	60
caggggggaca gacctggaca gacacgttgt catttgctgc tgtgggtagg aaaatgggcg	120
taaaggagga gaaacagata caaatctcc aactcagtat taaggatttc tcatgcctag	180
aatattggta gaaacaagaa tacattcata tggcaaataa ctaaccatgg tggaacaaaa	240
ttctgggatt taagttggat accaangaaa ttgtattaaa agagctgttc atggaataag	300
a	301

<210> 306
 <211> 8
 <212> PRT
 <213> Homo sapien

<400> 306
 Val Leu Gly Trp Val Ala Glu Leu
 1 5

<210> 307
 <211> 637
 <212> DNA
 <213> Homo sapien

<400> 307	
acagggratg aagggaaagg gagaggatga ggaagccccc ctggggattt ggtttggtcc	60
ttgtgatcag gtggtctatg gggcttatcc ctacaaagaa gaatccagaa ataggggcac	120
attgaggaat gatacttgag cccaaagagc attcaatcat tgttttattt gccttmtttt	180
cacaccattg gtgagggagg gattaccacc ctggggttat gaagatgggt gaacacccca	240
cacatagcac cggagatatg agatcaacag tttcttagcc atagagattc acagcccaga	300
gcaggaggac gcttgacac catgcaggat gacatggggg atgcgctcgg gattgggtgtg	360
aagaagcaag gactgttaga ggcaggcttt atagtaacaa gacgggtggg caaactctga	420
tttccgtggg ggaatgtcat ggtcttgctt tactaagttt tgagactggc aggtagtga	480
actcattagg ctgagaacct tgtggaatgc acttgaccca sctgatagag gaagtagcca	540
ggtagggagcc tttcccagtg ggtgtgggac atatctggca agattttgtg gcactcctgg	600
ttacagatac tggggcagca aataaaaactg aatcttg	637

<210> 308
 <211> 647
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(647)
 <223> n = A,T,C or G

<400> 308

acgattttca	ttatcatgta	aatcgggtca	ctcaaggggc	caaccacagc	tgggagccac	60
tgctcagggg	aaggttcata	tgggactttc	tactgcccac	ggttctatac	aggatataaa	120
gnggcctcac	agtatagatc	tggtagcaaa	gaagaagaaa	caaacactga	tctctttctg	180
ccacccctct	gacccttttg	aactcctctg	accctttaga	acaagcctac	ctaataatctg	240
ctagagaaaa	gaccaacaac	ggcctcaaaag	gatctcttac	catgaaggtc	tcagctaatt	300
cttggctaag	atgtgggttc	cacattaggt	tctgaatatg	gggggaaggg	tcaatttgct	360
catttttgtg	gtggataaag	tcaggatgcc	cagggggccag	agcagggggc	tgcttgcttt	420
gggaacaatg	gctgagcata	taaccatagg	ttatggggaa	caaaacaaca	tcaaagtcac	480
tgtatcaatt	gccatgaaga	cttgagggac	ctgaatctac	cgattcatct	taaggcagca	540
ggaccagttt	gagtggcaac	aatgcagcag	cagaatcaat	ggaaacaaca	gaatgattgc	600
aatgtccttt	tttttctcct	gcttctgact	tgataaaaag	ggaccgt		647

<210> 309
 <211> 460
 <212> DNA
 <213> Homo sapien

<400> 309

actttatagt	ttaggctgga	cattggaaaa	aaaaaaaaagc	cagaacaaca	tgtgatagat	60
aatatgattg	gctgcacact	tccagactga	tgaatgatga	acgtgatgga	ctattgtatg	120
gagcacatct	tcagcaagag	ggggaaatac	tcatcatttt	tggccagcag	ttgtttgatc	180
accaaacatc	atgccagaat	actcagcaaa	ccttcttagc	tcttgagaag	tcaaagtccg	240
ggggaattta	ttcctggcaa	ttttaattgg	actccttatg	tgagagcagc	ggctacccag	300
ctgggggtggt	ggagcgaacc	cgtcactagt	ggacatgcag	tggcagagct	cctggtaacc	360
acctagagga	atacacaggc	acatgtgtga	tgccaagcgt	gacacctgta	gcactcaaat	420
ttgtcttggt	tttgtctttc	ggtgtgtaag	attcttaagt			460

<210> 310
 <211> 539
 <212> DNA
 <213> Homo sapien

<400> 310

acgggactta	tcaaataaag	ataggaaaag	aagaaaactc	aaatattata	ggcagaaatg	60
ctaaaggttt	taaaatatgt	caggattgga	agaaggcatg	gataaagaac	aaagttcagt	120
taggaaagag	aaacacagaa	ggaagagaca	caataaaaagt	cattatgtat	tctgtgagaa	180
gtcagacagt	aagattttgtg	ggaaatgggt	tggtttgttg	tatgggtatg	atttttagcaa	240
taatctttat	ggcagagaaa	gctaaaatcc	tttagcttgc	gtgaatgatc	acttgctgaa	300
ttcctcaagg	taggcatgat	gaaggagggt	ttagaggaga	cacagacaca	atgaactgac	360
ctagatagaa	agccttagta	tactcagcta	ggaatagtga	ttctgagggc	acactgtgac	420
atgattatgt	cattacatgt	atggtagtga	tggggatgat	aggaaggaag	aacttatggc	480
atattttcac	ccccacaaaa	gtcagttaaa	tattggggaca	ctaaccatcc	aggtcaaga	539

<210> 311
 <211> 526
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(526)
 <223> n = A,T,C or G

<400> 311
 caaatttgag ccaatgacat agaattttac aaatcaagaa gcttattctg gggccatttc 60
 ttttgacgtt ttctctaaac tactaaagag gcattaatga tccataaatt atattatcta 120
 catttacagc atttaaaatg tgttcagcat gaaatattag ctacagggga agctaaataa 180
 attaaacatg gaataaagat ttgtccttaa atataatcta caagaagact ttgatatttg 240
 tttttcacia gtgaagcatt cttataaagt gtcataacct ttttggggaa actatgggaa 300
 aaaatgggga aactctgaag ggttttaagt atcttacctg aagctacaga ctccataacc 360
 tctctttaca gggagctcct gcagccccta cagaaatgag tggctgagat tcttgattgc 420
 acagcaagag cttctcatct aaaccctttc cttttttagt atctgtgtat caagtataaa 480
 agttctataa actgtagtnt acttatttta atccccaaag cacagt 526

<210> 312
 <211> 500
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(500)
 <223> n = A,T,C or G

<400> 312
 cctctctctc cccaccccct gactctagag aactggggtt tctcccagta ctccagcaat 60
 tcattttctga aagcagttga gccactttat tccaaagtac actgcagatg ttcaaactct 120
 ccattttctc ttcctttcca cctgccagtt ttgctgactc tcaacttgtc atgagtgtaa 180
 gcattaagga cattatgctt cttcgattct gaagacaggc cctgctcatg gatgactctg 240
 gcttcttagg aaaatatatt tcttccaaaa tcagtaggaa atctaaactt atccccctct 300
 tgcagatgtc tagcagcttc agacattttg ttaagaacct atgggaaaaa aaaaaatcct 360
 tgctaattg gtttcctttg taaaccanga ttcttatttg nctggatatg aatatcagct 420
 ctgaacgtgt ggtaaagatt tttgtgtttg aatataggag aaatcagttt gctgaaaagt 480
 tagtcttaat tatctattgg 500

<210> 313
 <211> 718
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(718)
 <223> n = A,T,C or G

<400> 313
 ggagatttgt gtggtttgca gccgagggag accaggaaga tctgcatggt gggaaggacc 60
 tgatgataca gaggtgagaa ataagaaagg ctgctgactt taccatctga ggccacacat 120
 ctgctgaaat ggagataatt aacatcacta gaaacagcaa gatgacaata taatgtctaa 180
 gtagtgacat gtttttgac atttccagcc cttttaaata tccacacaca caggaagcac 240
 aaaaggaagc acagagatcc ctgggagaaa tgcccggccg ccactctggg tcatcgatga 300
 gcctcgccct gtgcctgntc ccgcttgtga gggaaggaca ttagaaaatg aattgatgtg 360
 ttccttaaaag gatggcagga aaacagatcc tggtgtggat atttatttga acgggattac 420

agatttgaaa tgaagtcaca aagtgagcat taccaatgag aggaaaacag acgagaaaat	480
cttgatgggt cacaagacat gcaacaaaca aaatggaata ctgtgatgac acgagcagcc	540
aactggggag gagataccac ggggcagagg tcaggattct ggccctgctg cctaactgtg	600
cgttatacca atcatttcta tttctaccct caaacaagct gtngaataatc tgacttacgg	660
ttcttntggc ccacattttc atnatccacc cntcntttt aannttantc caaantgt	718

<210> 314

<211> 358

<212> DNA

<213> Homo sapien

<400> 314

gtttattttac attacagaaa aaacatcaag acaatgtata ctattttcaaa tatatccata	60
cataatcaaa tatagctgta gtacatgttt tcattgggtg agattaccac aaatgcaagg	120
caacatgtgt agatctcttg tcttattctt ttgtctataa tactgtattg tgtagtccaa	180
gctctcggta gtccagccac tgtgaaacat gctcccttta gattaacctc gtggacgctc	240
ttgttgatt gctgaactgt agtgccctgt attttgcttc tgtctgtgaa ttctgttget	300
tctggggcat ttccttgatga tgcagaggac caccacacag atgacagcaa tctgaatt	358

<210> 315

<211> 341

<212> DNA

<213> Homo sapien

<400> 315

taccacctcc ccgctggcac tgatgagccg catcaccatg gtcaccagca ccatgaaggc	60
ataggtgatg atgaggacat ggaatgggcc cccaaggatg gtctgtccaa agaagcgagt	120
gacccccatt ctgaagatgt ctggaacctc taccagcagg atgatgatag cccaatgac	180
agtcaccagc tccccgacca gccggatata gtccttaggg gtcattgtag ctctctgaag	240
tagcttctgc tgtaagaggg tggtgtcccg ggggctcgtg cggttattgg tcctgggctt	300
gagggggcgg tagatgcagc acatggtgaa gcagatgatg t	341

<210> 316

<211> 151

<212> DNA

<213> Homo sapien

<400> 316

agactgggca agactcttac gccccacact gcaatttggt cttgttgccg tatccattta	60
tgtgggcctt tctcgagttt ctgattataa acaccactgg agcgatgtgt tgactggact	120
cattcagggga gctctggttg caatattagt t	151

<210> 317

<211> 151

<212> DNA

<213> Homo sapien

<400> 317

agaactagtg gatcctaagt aaatacctga aacatatatt ggcatttata aatgggctcaa	60
atcttcatatt atctctggcc ttaaccctgg ctcttgaggc tgcggccagc agatcccagg	120
ccagggctct gttcttgcca cacctgcttg a	151

<210> 318

<211> 151

<212> DNA

<213> Homo sapien

<400> 318

actggtggga ggcgctgttt agttggctgt tttcagaggg gtctttcggga gggacctcct	60
gctgcaggct ggagtgtctt tattcctggc gggagaccgc acattccact gctgaggctg	120
tgggggcggg ttatcaggca gtgataaaca t	151

<210> 319

<211> 151

<212> DNA

<213> Homo sapien

<400> 319

aactagtggga tccagagcta taggtacagt gtgatctcag ctttgcaaac acattttcta	60
catagatagt actaggtatt aatagatatg taaagaaaga aatcacacca ttaataatgg	120
taagattggg tttatgtgat tttagtgggt a	151

<210> 320

<211> 150

<212> DNA

<213> Homo sapien

<400> 320

aactagtggga tccactagtc cagtgtgggtg gaattccatt gtggtggggt tctagatcgc	60
gagcggctgc cctttttttt ttttttttg ggggggaatt tttttttttt aatagttatt	120
gagtgttcta cagcttacag taaataccat	150

<210> 321

<211> 151

<212> DNA

<213> Homo sapien

<400> 321

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<210> 322

<211> 151

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(151)

<223> n = A,T,C or G

<400> 322

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<210> 323

<211> 151

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(151)

<223> n = A,T,C or G

<400> 323

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gttcaatyaa aaagacactt ancccatgtg	g	151

<210> 324

<211> 461

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(461)

<223> n = A,T,C or G

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<210> 325

<211> 400

<212> DNA

<213> Homo sapien

<400> 325

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<210> 326

<211> 1215

<212> DNA

<213> Homo sapien

<400> 326

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<210> 327

<211> 220

<212> PRT

<213> Homo sapien

<400> 327

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Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly
35          40          45
Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu
50          55          60
Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu Ala
65          70          75          80
Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser Asp
85          90          95
Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly Asn
100         105         110
Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met Pro
115         120         125
Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu Val Cys
130         135         140
Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala Gly
145         150         155         160
Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly Pro
165         170         175
Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys Ala
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Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu Cys Lys
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<210> 328

<211> 234
 <212> DNA
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<210> 329
 <211> 77
 <212> PRT
 <213> Homo sapien

<400> 329
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 35 40 45
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 <211> 70
 <212> DNA
 <213> Homo sapien

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<210> 331
 <211> 22
 <212> PRT
 <213> Homo sapien

<400> 331
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 Val Ser Gly Ser Cys Ser
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 <212> DNA
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<210> 333

<211> 3030

<212> DNA

<213> Homo sapien

<400> 333

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<211> 2417

<212> DNA

<213> Homo sapien

<400> 334

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<210> 335

<211> 2984

<212> DNA

<213> Homo sapien

<400> 335

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<210> 336

<211> 147

<212> PRT

<213> Homo sapien

<400> 336

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Pro Lys Gln Pro Gln Lys Arg Ser Arg Ala Ala Phe Ser His Thr Gln
35          40          45
Val Ile Glu Leu Glu Arg Lys Phe Ser His Gln Lys Tyr Leu Ser Ala
50          55          60
Pro Glu Arg Ala His Leu Ala Lys Asn Leu Lys Leu Thr Glu Thr Gln
65          70          75          80

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Val Lys Ile Trp Phe Gln Asn Arg Arg Tyr Lys Thr Lys Arg Lys Gln
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 Leu Ser Ser Glu Leu Gly Asp Leu Glu Lys His Ser Ser Leu Pro Ala
 100 105 110
 Leu Lys Glu Glu Ala Phe Ser Arg Ala Ser Leu Val Ser Val Tyr Asn
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 Ser Tyr Pro Tyr Tyr Pro Tyr Leu Tyr Cys Val Gly Ser Trp Ser Pro
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 Ala Phe Trp
 145

<210> 337
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 337
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 1 5

<210> 338
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 338
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 1 5

<210> 339
 <211> 318
 <212> PRT
 <213> Homo sapien

<400> 339
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 35 40 45
 Ala Asn Thr Gly Ile Gly Lys Glu Thr Ala Lys Glu Leu Ala Gln Arg
 50 55 60
 Gly Ala Arg Val Tyr Leu Ala Cys Arg Asp Val Glu Lys Gly Glu Leu
 65 70 75 80
 Val Ala Lys Glu Ile Gln Thr Thr Thr Gly Asn Gln Gln Val Leu Val
 85 90 95
 Arg Lys Leu Asp Leu Ser Asp Thr Lys Ser Ile Arg Ala Phe Ala Lys
 100 105 110
 Gly Phe Leu Ala Glu Glu Lys His Leu His Val Leu Ile Asn Asn Ala
 115 120 125
 Gly Val Met Met Cys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Met
 130 135 140
 His Ile Gly Val Asn His Leu Gly His Phe Leu Leu Thr His Leu Leu

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145          150          155          160
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          165          170          175
Ser Leu Ala His His Leu Gly Arg Ile His Phe His Asn Leu Gln Gly
          180          185          190
Glu Lys Phe Tyr Asn Ala Gly Leu Ala Tyr Cys His Ser Lys Leu Ala
          195          200          205
Asn Ile Leu Phe Thr Gln Glu Leu Ala Arg Arg Leu Lys Gly Ser Gly
          210          215          220
Val Thr Thr Tyr Ser Val His Pro Gly Thr Val Gln Ser Glu Leu Val
          225          230          235          240
Arg His Ser Ser Phe Met Arg Trp Met Trp Trp Leu Phe Ser Phe Phe
          245          250          255
Ile Lys Thr Pro Gln Gln Gly Ala Gln Thr Ser Leu His Cys Ala Leu
          260          265          270
Thr Glu Gly Leu Glu Ile Leu Ser Gly Asn His Phe Ser Asp Cys His
          275          280          285
Val Ala Trp Val Ser Ala Gln Ala Arg Asn Glu Thr Ile Ala Arg Arg
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Leu Trp Asp Val Ser Cys Asp Leu Leu Gly Leu Pro Ile Asp
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<210> 340
 <211> 483
 <212> DNA
 <213> Homo sapien

<400> 340

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ggttggtgggg gcggtttatc aggcagtgat aaacataaga tgtcatttcc ttgactccgg      240
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gctccaaacg tgacatcact gatgctcttc tcgggggtgc tgatggcccg cttgggtcacg      360
tgctcaattc cgccattcga ctcttgctcc aaactgtatg aagacacctg actgcacggt      420
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ctg                                     483

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<210> 341
 <211> 344
 <212> DNA
 <213> Homo sapien

<400> 341

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gctgccttac aagtattaaa tattttactt ctttccataa agagtagctc aaaatatgca      180
attaatttaa taatttctga tgatggtttt atctgcagta atatgtatat catctattag      240
aatttactta atgaaaaact gaagagaaca aaatttgtaa ccactagcac ttaagtactc      300
ctgattctta acattgtctt taatgaccac aagacaacca acag                                     344

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<210> 342
 <211> 592
 <212> DNA
 <213> Homo sapien

<400> 342

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cctggcaggt	aaaccaatgc	caagagagtg	atggaaacca	ttggcaagac	tttgttgatg	180
accaggattg	gaattttata	aaaatattgt	tgatgggaag	ttgctaaagg	gtgaattact	240
tccctcagaa	gagtgtaaag	aaaagtcaga	gatgctataa	tagcagctat	tttaattggc	300
aagtgccact	gtggaaagag	ttcctgtgtg	tgctgaagtt	ctgaagggca	gtcaaattca	360
tcagcatggg	ctgtttggtg	caaatgcaaa	agcacaggtc	tttttagcat	gctgggtctct	420
cccgtgtcct	tatgcaaata	atcgtcttct	tctaaatttc	tcttaggctt	cattttccaa	480
agttcttctt	ggtttgatg	gtcttttctg	ctttccatta	attctataaa	atagtatggc	540
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<210> 343

<211> 382

<212> DNA

<213> Homo sapien

<400> 343

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cttgtaactc	tcctttctcc	tttcttcccc	ttctctgcc	cgctttccc	atcctgctgt	180
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ctgactgccc	aaggggctca	gaaccccagc	aatcccttcc	tttactacc	ttcttttttg	300
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<210> 344

<211> 536

<212> DNA

<213> Homo sapien

<400> 344

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ccttcttatt	atttgatcta	gaaattgccc	tccttttacc	cctaccatga	gccctacaaa	420
caactaacct	gccactaata	gttatgtcat	ccctcttatt	aatcatcatc	ctagccctaa	480
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<210> 345

<211> 251

<212> DNA

<213> Homo sapien

<400> 345

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gcgtgggcca	ggaaatcaca	tcctacactg	cccaggagcc	agacacattt	atggaacaga	180
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<210> 346
 <211> 282
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(282)
 <223> n = A,T,C or G

<400> 346
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 agggagacta tacctggctc ttgccctaag tgagaggtct tccctcccgcc accaaaaaat 180
 agaaaggctt tctatttcac tggcccaggt agggggaagg agagtaactt tgagtctgtg 240
 ggtctcattt cccaagggtgc cttcaatgct catnaaaacc aa 282

<210> 347
 <211> 201
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(201)
 <223> n = A,T,C or G

<400> 347
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 tctgagactg actggaccca cccagaccca gggcaaagat acatgttacc atatcatctt 180
 tataaagaat ttttttttgt c 201

<210> 348
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 348
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 aggagacact ccagcatgg aggaggggtt atcttttcat cctaggtcag gtctacaatg 180
 ggggaagggtt ttattataga actcccaaca gccacactca ctctgcccac ccacccgatg 240
 gccctgcctc c 251

<210> 349
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 349
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 cagaagggtc tgaactctac gtgttaccag agaacataat gcaattcatg cattccactt 180
 agcaattttg taaaataacca gaaacagacc ccaagagtct ttcaagatga ggaaaattca 240

actcctgggtt t

251

<210> 350

<211> 908

<212> DNA

<213> Homo sapien

<400> 350

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tatcaatatg	caggagccat	cttgacaggtg	tgatgctggg	tatactggac	aacactgtga	840
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aatcgacg						908

<210> 351

<211> 472

<212> DNA

<213> Homo sapien

<400> 351

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cattaacttg	attttaaaat	cagwtttgyg	agtcatttac	cacaagctaa	atgtgtacac	180
tatgataaaa	acaaccattg	tattcctgtt	tttctaaaca	gtcctaattt	ctaactactgt	240
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tcagccccct	tttggcctgt	ttgttttgtc	aaaaaccta	tctgcttctt	gcttttcttg	420
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<210> 352

<211> 251

<212> DNA

<213> Homo sapien

<400> 352

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caggctgcgt	tcctgcctta	cgatgaagac	cacgatgcag	tttccaaaca	ttgccactac	180
atacatggaa	aggagggggga	agccaaccca	gaaatgggct	ttctctaata	ctgggataacc	240
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<210> 353

<211> 436

<212> DNA

<213> Homo sapien

<400> 353

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gtatccaaaa	gcaaaacagc	agatatata	aattaaagag	acagaagata	gacattaaca	180
gataaggcaa	cttatacatt	gacaatccaa	atccaatata	tttaaacatt	tgggaaatga	240
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tcatgtctga	raaggctctc	ccttcaatgg	ggatgacaaa	ctccaaatgc	cacacaaatg	360
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<210> 354

<211> 854

<212> DNA

<213> Homo sapien

<400> 354

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<210> 355

<211> 676

<212> DNA

<213> Homo sapien

<400> 355

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atccacaagt	catacctgga	tgtagcgaa	gagggcacgg	aggcagcagc	agccactggg	180
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<210> 356

<211> 574

<212> DNA

<213> Homo sapien

<400> 356

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caagcttccc	attttagat	ctcagtgcct	atgagtatct	gacacctgtt	cctctcttca	180
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aaaagtccac	aaaactgcag	tctttgctgg	gatagtaagc	caagcagtgc	ctggacagca	300
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ttcttctgtc	tctgcctaga	ctggaataaa	aagccaatct	ctctcgtggc	acaggggaagg	420
agatacaagc	tcgtttacat	gtgatagatc	taacaaaggc	atctaccgaa	gtctgggtctg	480
gatagacggc	acagggagct	cttaggtcag	cgctgctggt	tggaggacat	tcctgagtcc	540
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<210> 357

<211> 393

<212> DNA

<213> Homo sapien

<400> 357

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aagccacaac	caaracttga	ttttatcaac	aaaaaccctt	aaatataaac	ggsaaaaaag	180
atagatataa	ttattccagt	ttttttaaaa	cttaaaarat	attccattgc	cgaattaara	240
araarataag	tggttatatg	aaagaagggc	attcaagcac	actaaaraaa	cctgaggkaa	300
gcataatctg	tacaaaatta	aactgtcctt	tttggcattt	taacaaattt	gcaacgktct	360
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<210> 358

<211> 630

<212> DNA

<213> Homo sapien

<400> 358

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gcatagagta	gggaagctaa	tccagcacag	ggaggtcaca	gagacatccc	taaggaagtg	180
gagtttaaac	tgagagaagc	aagtgcctaa	actgaaggat	gtgttgaaga	agaagggaga	240
gtagaacaat	ttgggcagag	ggaaccttat	agaccctaag	gtgggaaggt	tcaaagaact	300
gaaagagagc	tagaacagct	ggagccgttc	tccggtgtaa	agaggagtca	aagagataag	360
attaaagatg	tgaagattaa	gatcttggtg	gcattcaggg	attggcactt	ctacaagaaa	420
tcactgaagg	gagtaatgtg	acattacttt	tcacttcagg	atggccattc	taactccagg	480
gggtagactg	gactaggtaa	gactggaggc	aggtagacct	cttctaaggc	ctgcatagtg	540
gaaagacaaa	aataagtggg	gaaattcagg	ggatagttaa	aatcagtagg	acttaatgag	600
caagccagag	gttcctccac	aacaaccagt				630

<210> 359

<211> 620

<212> DNA

<213> Homo sapien

<400> 359

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ctcaccagaa	gaataaagtg	ctctgccagt	tattaaagga	ttactgctgg	tgaattaaat	180
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aatgtcattg	acttatcaaa	tactatcttg	gcatataacc	tatgaaggca	aaactaaaca	540
aacaaaaagc	tcacaccaaa	caaaaccatc	aacttatttt	gtattctata	acatacgaga	600
ctgtaaagat	gtgacagtgt					620

<210> 360

<211> 431

<212> DNA

<213> Homo sapien

<400> 360

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tactcatcat	ttttggccag	cagttgtttg	atcaccaaac	atcatgccag	aatactcagc	180
aaaccttctt	agctcttgag	aagtcaaagt	ccgggggaat	ttattcctgg	caattttaat	240
tggaactcctt	atgtgagagc	agcggctacc	cagctggggt	ggtggagcga	acccgtcact	300
agtggacatg	cagtggcaga	gtccttggtg	accacctaga	ggaatacaca	ggcacatgtg	360
tgatgccaaag	cgtgacacct	gtagcactca	aatttgtctt	gtttttgtct	ttcgggtgtgt	420
agattcttag	t					431

<210> 361

<211> 351

<212> DNA

<213> Homo sapien

<400> 361

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ttgacttctt	ccggggcttt	cccgaagggt	tcaccgtgag	ccctgcggcc	ctcagggctg	240
caatcctgga	ttcaatgtct	gaaacctcgc	tctctgcctg	ctggacttct	gagggcgtca	300
ctgccactct	gtcctccagc	tctgacagct	cctcatctgt	ggtcctggtg	t	351

<210> 362

<211> 463

<212> DNA

<213> Homo sapien

<400> 362

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ccccggtcac	agaaatgacc	aggttgggtg	ttttcagggtg	ccagtgtctg	gtcagcagct	180
cgtaaaggat	ttccgcgtcc	gtgtcgcagg	acagacgtat	atacttccct	ttcttcccca	240
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agttccattt	ctcacttttg	ttgatctggg	tgcttcccat	gtgctggctc	tgggcatagc	360
cacacttgca	cacattctcc	ctgataagca	cgatggtgtg	gacagggaagg	aaggatttca	420
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<210> 363

<211> 653

<212> DNA

<213> Homo sapien

<220>

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<222> (1)...(653)

<223> n = A,T,C or G

<400> 363

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tgaggagcac tacgcaagat gggactgcgt cctgggggtga gacatcctct ccttgagat      180
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ccaacagcaa ccccccgga gtatgagttc ctctrgggcc tccgttccta ccatgagasc      300
tagcaagatg naagtgttga gantcattgc agaggttcag aaaagagacc cntcgtgact      360
ggtctgcaca gttcatggag gctgcagatg aggccttgga tgctctggat gctgctgcag      420
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ntgggccctg gagctgggat gacattgagt ttgagctgct gacctgggat gaggaaggag      540
atcttgagga tccntgggcc agaattccat ttacctcttg ggccagatac caccagaatg      600
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<210> 364

<211> 401

<212> DNA

<213> Homo sapien

<400> 364

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aaaacaaggt ggatagatct agaattgtaa cattttaaga aaaccatagc atttgacaga      180
tgagaaaagct caattataga tgcaaagtta taactaaact actatagtag taaagaaata      240
catttcacac cttcatata aattcactat cttggcttga ggcaactccat aaaatgtatc      300
acgtgcatag taaatcttta tatttgctat ggcgttgac tagaggactt ggactgcaac      360
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<210> 365

<211> 356

<212> DNA

<213> Homo sapien

<400> 365

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atgtttcagt gctagagcgt aggaatagac cctggcgctc actgtgagat gttcttcagc      120
taccagagca tcaagtctct gcagcaggtc attcttgggt aaagaaatga cttccacaaa      180
ctctccatcc cctggctttg gcttcggcct tgcgttttcg gcatcatctc cgtaaattggt      240
gactgtcacg atgtgtatag tacagtttga caagcctggg tccatacaga ccgctggaga      300
acattcggca atgtcccctt tgtagccagt ttcttcttcg agctcccgga gagcag          356

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<210> 366

<211> 1851

<212> DNA

<213> Homo sapien

<400> 366

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tcacaccat tgccagcagc ggcaccgtta gtcaggtttt ctgggaatcc cacatgagta      60

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caaattacat	gatgatgact	agaaacagca	tactctctgg	ccgtctttcc	agatcttgag	300
aagatacatc	aacatttttg	tcaagtagag	ggctgactat	acttgctgat	ccacaacata	360
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cttttcccca	tttagtatta	tggtggctgt	gggcttgtca	taggtggttt	ttattacttt	1800
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<210> 367

<211> 668

<212> DNA

<213> Homo sapien

<400> 367

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ttcagtattt	tgaagataaa	atttgtatag	ctataccttg	ttttttgatt	cgatatcagc	120
acctataaag	agcagtgtt	tggccattaa	tttatctttc	attttagaca	gctagtgya	180
gagtgggtatt	tccataactca	tctggaatat	ttggatcagt	gccatgttcc	agcaacatta	240
acgcacattc	atcttctctg	cattgtacgg	cctgtcagta	ttagacccaa	aaacaaatta	300
catatcttag	gaattcaaaa	taacattcca	cagctttcac	caactagtta	tatttaaagg	360
agaaaactca	tttttatgcc	atgtattgaa	atcaaaccga	cctcatgctg	atatagttgg	420
ctactgcata	cctttatcag	agctgtcctc	tttttgttgt	caaggacatt	aagttgacat	480
cgtctgtcca	gcaggagttt	tactacttct	gaattcccat	tggcagaggc	cagatgtaga	540
gcagtcctat	gagagtgaga	agacttttta	ggaaattgta	gtgcactagc	tacagccata	600
gcaatgattc	atgtaactgc	aaacactgaa	tagcctgcta	ttactctgcc	ttcaaaaaaa	660
aaaaaaaa						668

<210> 368

<211> 1512

<212> DNA

<213> Homo sapien

<400> 368

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gaagtagtaa	aactcstgct	ggacagacga	tgtcaactta	atgtccttga	caacaaaaag	840
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<210> 369

<211> 1853

<212> DNA

<213> Homo sapien

<400> 369

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<210> 370

<211> 2184

<212> DNA

<213> Homo sapien

<400> 370

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aaaaccacct	atgacaagcc	cacagccaac	ataatactaa	atggggaaaaa	gttagaagca	120
tttccctctga	gaactgcaac	aataaatata	aggatgctgg	attttgtcaa	atgccttttc	180
tgtgtctgtt	gagatgctta	tgtgactttg	cttttaattc	tgtttatgtg	attatcacat	240
ttattgactt	gcctgtgtta	gaccggaaga	gctggggtgt	ttctcaggag	ccaccgtgtg	300
ctgcggcagc	ttcgggataa	cttgaggctg	catcactggg	gaagaaacac	aytcctgtcc	360
gtggcgctga	tggctgagga	cagagcttca	gtgtggcttc	tctgugactg	gcttcttcgg	420
ggagttcttc	cttcatagtt	catccatagt	gctccagagg	aaaattatat	tattttgtta	480
tggatgaaga	gtattacgtt	gtgcagatat	actgcagtgt	cttcatctct	tgatgtgtga	540
ttgggttaggt	tccaccatgt	tgccgcagat	gacatgattt	cagtacctgt	gtctggctga	600
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<210> 371
 <211> 1855
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(1855)
 <223> n = A,T,C or G

<400> 371

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cgtaacggct	tggctgccct	gtaacggctt	gcacgtgcat	gctgcacgcg	cgtaacggc	240
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<210> 372
 <211> 1059
 <212> DNA
 <213> Homo sapien

<400> 372

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gcgcttgrgg	agactmcgat	gacagygcct	tcattggagcc	caggtaccac	gtccgtggag	180
aagatctgga	caagctccac	agagctgccc	tgggtggggtg	aagtccccag	aaaggatctc	240
atcgatcatg	tcagggacac	tgaygtgaac	aagarggaca	agcaaaagag	gactgctcta	300
catctggcct	ctgccaatgg	gaattcagaa	gtagtataaac	tcstgctgga	cagacgatgt	360

caacttaatg	tccttgacaa	caaaaagagg	acagctctga	yaaaggccgt	acaatgccag	420
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ctgctcttat	ayggtgctga	tatcgaatca	aaaaacaagg	tatagatcta	ctaattttat	600
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<210> 373

<211> 1155

<212> DNA

<213> Homo sapien

<400> 373

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<210> 374

<211> 2000

<212> DNA

<213> Homo sapien

<400> 374

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ggagactacg	atgacagtgc	cttcatggag	cccagggtacc	acgtccgtgg	agaagatctg	420
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<210> 375

<211> 2040

<212> DNA

<213> Homo sapien

<400> 375

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<210> 376

<211> 329

<212> PRT

<213> Homo sapien

<400> 376

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Leu His Leu Ala Gly Ser Asp Leu Leu Ser Arg Ser Leu Met Ala Glu
20     25     30
Glu Tyr Thr Ile Val His Ala Ser Phe Ile Ser Cys Ile Ser Ser Ser
35     40     45
Leu Asp Gly Gln Gly Glu Arg Gln Glu Gln Arg Gly His Phe Trp Arg
50     55     60
Pro Gln Arg Leu Leu Cys Glu Asp Ala Trp Glu Gln Glu Val Gln Val
65     70     75     80
Val Leu Pro Leu Leu Pro Leu Leu Gln Gly Ser Gly Lys Ser Asn Val
85     90     95
Val Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe Met Asp Pro Arg Tyr
100    105    110
His Val His Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp
115    120    125
Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp
130    135    140
Val Asn Lys Arg Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser
145    150    155    160
Ala Asn Gly Asn Ser Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys
165    170    175
Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala
180    185    190
Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly
195    200    205
Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr
210    215    220
Ala Val Tyr Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr
225    230    235    240
Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu
245    250    255
Leu Gly Ile His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys
260    265    270
Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu
275    280    285
Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu

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290		295		300
Glu Gln Asn Val Asp Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu				
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Ser Met Leu Phe Leu Val Ile Ile Met				320
		325		

<210> 377
 <211> 148
 <212> PRT
 <213> Homo sapien

<220>
 <221> VARIANT
 <222> (1)...(148)
 <223> Xaa = Any Amino Acid

<400> 377

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Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Xaa Asp Lys				
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Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu				
	50		55	60
Val Val Lys Leu Xaa Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp				
	65		70	75
Asn Lys Lys Arg Thr Ala Leu Xaa Lys Ala Val Gln Cys Gln Glu Asp				
		85		90
Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro				
	100		105	110
Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Xaa Tyr Asn Glu Asp				
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Lys Leu Met Ala Lys Ala Leu Leu Tyr Gly Ala Asp Ile Glu Ser				
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Lys Asn Lys Val				
145				

<210> 378
 <211> 1719
 <212> PRT
 <213> Homo sapien

<400> 378

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Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp				
	35		40	45
His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp				
	50		55	60
Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val				
	65		70	75
Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn				

85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
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 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His Val
 340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Asn Val Ser Arg Thr Arg Asn Lys
 370 375 380
 Pro Arg Thr His Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser
 385 390 395 400
 Ser Val Lys Lys Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys
 405 410 415
 Cys Arg Cys Phe Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly
 420 425 430
 Thr Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys
 435 440 445
 Met Gly Lys Trp Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly
 450 455 460
 Lys Ser Asn Val Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys
 465 470 475 480
 Thr Leu Arg Asn Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys
 485 490 495
 Cys Arg Gly Ser Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp
 500 505 510
 Asp Ser Ala Phe Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu
 515 520 525

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Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp
530                               535                               540
Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln
545                               550                               555                               560
Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val
565                               570                               575
Val Lys Leu Leu Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn
580                               585                               590
Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu
595                               600                               605
Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp
610                               615                               620
Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys
625                               630                               635                               640
Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys
645                               650                               655
Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys
660                               665                               670
Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala
675                               680                               685
Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly
690                               695                               700
Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser
705                               710                               715                               720
Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser
725                               730                               735
His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln
740                               745                               750
Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys
755                               760                               765
Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser
770                               775                               780
Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp
785                               790                               795                               800
Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly
805                               810                               815
Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn
820                               825                               830
Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe
835                               840                               845
Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser
850                               855                               860
Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn
865                               870                               875                               880
Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu
885                               890                               895
Glu Gly Ser Glu Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile
900                               905                               910
Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn
915                               920                               925
Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro
930                               935                               940
Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu
945                               950                               955                               960
Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe

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965 970 975
 Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His
 980 985 990
 Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser
 995 1000 1005
 Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu
 1010 1015 1020
 Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr Met Lys His
 1025 1030 1035 104
 Gln Ser Gln Leu Pro Arg Thr His Met Val Val Glu Val Asp Ser Met
 1045 1050 1055
 Pro Ala Ala Ser Ser Val Lys Lys Pro Phe Gly Leu Arg Ser Lys Met
 1060 1065 1070
 Gly Lys Trp Cys Cys Arg Cys Phe Pro Cys Cys Arg Glu Ser Gly Lys
 1075 1080 1085
 Ser Asn Val Gly Thr Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr
 1090 1095 1100
 Leu Arg Ser Lys Met Gly Lys Trp Cys Arg His Cys Phe Pro Cys Cys
 1105 1110 1115 112
 Arg Gly Ser Gly Lys Ser Asn Val Gly Ala Ser Gly Asp His Asp Asp
 1125 1130 1135
 Ser Ala Met Lys Thr Leu Arg Asn Lys Met Gly Lys Trp Cys Cys His
 1140 1145 1150
 Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Lys Val Gly Ala Trp
 1155 1160 1165
 Gly Asp Tyr Asp Asp Ser Ala Phe Met Glu Pro Arg Tyr His Val Arg
 1170 1175 1180
 Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val
 1185 1190 1195 120
 Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys
 1205 1210 1215
 Lys Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly
 1220 1225 1230
 Asn Ser Glu Val Val Lys Leu Leu Asp Arg Arg Cys Gln Leu Asn
 1235 1240 1245
 Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys
 1250 1255 1260
 Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro
 1265 1270 1275 128
 Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr
 1285 1290 1295
 Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp
 1300 1305 1310
 Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Val
 1315 1320 1325
 His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala
 1330 1335 1340
 Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala
 1345 1350 1355 136
 Val Cys Cys Gly Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn
 1365 1370 1375
 Ile Asp Val Ser Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr
 1380 1385 1390
 Ala Val Ser Ser His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr
 1395 1400 1405

Lys Glu Lys Gln Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu
 1410 1415 1420
 Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly
 1425 1430 1435 144
 Ser Glu Asn Ser Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn
 1445 1450 1455
 Lys Asp Gly Asp Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser
 1460 1465 1470
 Asn Asn Val Gly Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly
 1475 1480 1485
 Asn Gly Asp Asn Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu
 1490 1495 1500
 Asn Gln Gln Phe Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys
 1505 1510 1515 152
 Glu Leu Val Ser Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser
 1525 1530 1535
 Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu
 1540 1545 1550
 Ser Gln Arg Leu Glu Gly Ser Glu Asn Gly Gln Pro Glu Lys Arg Ser
 1555 1560 1565
 Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Leu Glu Asn Phe
 1570 1575 1580
 Met Ala Ile Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe
 1585 1590 1595 160
 Pro Glu Asn Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly
 1605 1610 1615
 Leu Ile Pro Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro
 1620 1625 1630
 Asp Thr Glu Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln
 1635 1640 1645
 Lys Gln Phe Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile
 1650 1655 1660
 Leu Ile His Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser
 1665 1670 1675 168
 Glu Leu Ser Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn
 1685 1690 1695
 Ser Thr Leu Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr
 1700 1705 1710
 Met Lys His Gln Ser Gln Leu
 1715

<210> 379

<211> 656

<212> PRT

<213> Homo sapien

<400> 379

Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys
 1 5 10 15
 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
 20 25 30
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60

Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val
 340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu
 370 375 380
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys
 385 390 395 400
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu
 405 410 415
 Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
 420 425 430
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu
 450 455 460
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu
 465 470 475 480
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp
 485 490 495
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu

225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val
 340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu
 370 375 380
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys
 385 390 395 400
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu
 405 410 415
 Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
 420 425 430
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu
 450 455 460
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu
 465 470 475 480
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp
 485 490 495
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu
 500 505 510
 Asn Gly Gln Pro Glu Lys Arg Ser Gln Glu Pro Glu Ile Asn Lys Asp
 515 520 525
 Gly Asp Arg Glu Leu Glu Asn Phe Met Ala Ile Glu Glu Met Lys Lys
 530 535 540
 His Gly Ser Thr His Val Gly Phe Pro Glu Asn Leu Thr Asn Gly Ala
 545 550 555 560
 Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro Pro Arg Lys Ser Arg
 565 570 575
 Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu Asn Glu Glu Tyr His
 580 585 590
 Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe Cys Glu Glu Gln Asn
 595 600 605
 Thr Gly Ile Leu His Asp Glu Ile Leu Ile His Glu Glu Lys Gln Ile
 610 615 620
 Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser Leu Ser Cys Lys Lys
 625 630 635 640
 Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu Arg Glu Glu Ile Ala
 645 650 655
 Met Leu Arg Leu Glu Leu Asp Thr Met Lys His Gln Ser Gln Leu
 660 665 670

<210> 381
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 381

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ccaatatccc	aggagaagca	ttggggagtt	gggggcaggt	gaaggaccca	ggactcacac	180
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caagcagtca	g					251

<210> 382
 <211> 3279
 <212> DNA
 <213> Homo sapiens

<400> 382

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<210> 383

<211> 155

<212> PRT

<213> Homo sapiens

<400> 383

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      20              25              30
His Cys Phe Ser Ser Glu Glu Ser Gly Ala Val Asp Gly Ala Gly Gln
      35              40              45
Lys Lys Asp Arg Ala Trp Leu Arg Cys Pro Glu Ala Val Ala Gly Phe
      50              55              60
Pro Leu Gly Ser Asp Cys Arg Glu Gly Gly Arg Gln Gly Cys Gly Gly
      65              70              75              80
Ser Asp Asp Glu Asp Asp Leu Gly Val Ala Pro Gly Leu Ala Pro Ala
      85              90              95
Trp Ala Leu Thr Gln Pro Pro Ser Gln Ser Pro Gly Pro Gln Ser Leu
      100             105             110
Pro Ser Thr Pro Ser Ser Ile Trp Pro Gln Trp Val Ile Leu Ile Thr
      115             120             125
Glu Leu Thr Ile Pro Ser Pro Ala His Gly Pro Pro Trp Leu Pro Asn
      130             135             140
Ala Leu Glu Arg Gly His Leu Val Arg Glu
      145             150

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<210> 384
 <211> 557
 <212> DNA
 <213> Homo sapiens

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 ggggaagggt cccttttgca ttgccaaagt ccataaccat gagcactact ctaccatggg 180
 tctgcctcct ggccaagcag gctggtttgc aagaatgaaa tgaatgattc tacagctagg 240
 acttaacctt gaaatggaaa gtcttgcaat cccatttgca ggatccgtct gtgcacatgc 300
 ctctgtagag agcagcattc ccagggacct tggaaacagt tggcactgta aggtgcttgc 360
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 ccttcttatt tatgtgaaca actgtttgtc tttttttgta tcttttttaa actgtaaaagt 480
 tcaattgtga aaatgaatat catgcaaata aattatgcga ttttttttcc aaagtaaaaa 540
 aaaaaaaaaa aaaaaaa 557

<210> 385
 <211> 337
 <212> DNA
 <213> Homo sapiens

<400> 385
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 tctcaaagcc atctgctgtc ttcgagtacg gacacatcat cactcctgca ttgttgatca 180
 aaacgtggag gtgcttttcc tcagctaaga agcccttagc aaaagctcga atagacttag 240
 tatcagacag gtccagtttc cgcaccaaca cctgctggtt ccctgtcgtg gtctggatct 300
 ctttggccac caattcccc tttccacat cccggca 337

<210> 386
 <211> 300
 <212> DNA
 <213> Homo sapiens

<400> 386
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 gcgaccttg ccgaaggct ctagcaagga cccaccgacc ccagccgcgg cggcggcggc 180
 gcggactttg ccggtgtgt ggggcggagc ggactgcgtg tccgcggacg ggcagcgaag 240
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<210> 387
 <211> 537
 <212> DNA
 <213> Homo sapiens

<400> 387
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 tgaaccagga ccggttctg ggcggctgaa aggggcaagg aggcaaggac cccgtctctc 180
 ccacggatgg ggagagggca ggaggagacc cagccaagtg ccttttcctc agcactgagg 240
 gagggggcct gtttcccttc cctcccggcg acaagctcca gggcagggct gtccctctg 300

```

gcggcccagc acttcctcag acacaacttc ttctgtctgc tccagtcgtg gggatcatca 360
cttaccacc cccaagttc aagaccaa atccagctg ccccttcgt gtttccctgt 420
gtttgctgta gctgggcatg tctccaggaa ccaagaagcc ctcagcctgg tgtagtctcc 480
ctgacccttg ttaattcctt aagtctaaag atgatgaact tcaaaaaaaaa aaaaaaa 537

```

<210> 388

<211> 520

<212> DNA

<213> Homo sapiens

<400> 388

```

aggataat ttaaaccaat caaatgaaaa aaacaaacaa acaaaaaagg aaatgtcatg 60
tgagggttaa ccagtttgca ttccccta atgtgaaaaa taagaggact actcagcact 120
gtttgaagat tgcctcttct acagcttctg agaattgtgt tatttcactt gccaaagtga 180
ggacccctc cccaacatgc cccagccac ccctaagcat ggtcccttgt caccaggcaa 240
ccaggaaact gctacttggt gacctacca gagaccagga gggtttggt agctcacagg 300
acttccccca cccagaaga ttagcatccc atactagact catactcaac tcaactaggc 360
tcatactcaa ttgatgggta ttagacaatt ccatttctt ctgggtatta taaacagaaa 420
atctttctc ttctcattac cagtaaaggc tcttggtatc tttctgttg aatgatttct 480
atgaacttgt cttattttaa tgggtgggtt ttttctggt 520

```

<210> 389

<211> 365

<212> DNA

<213> Homo sapiens

<400> 389

```

cggtgcccc gtttgacaga aggaaaggcg gagcttattc aaagtctaga gggagtggag 60
gagttaaggc tggatttcag atctgcctgg ttccagccgc agtgtgccct ctgctcccc 120
aacgacttcc caaataatct caccagcgc ttccagctca ggcgtcctag aagcgtcttg 180
aagcctatgg ccagctgtct ttgtgttccc tctcaccgc ctgtcctcac agctgagact 240
cccaggaaac cttcagacta ccttctctg ccttcagcaa ggggcgttg ccacattctc 300
tgagggtcag tggagaagacc tagactccca ttgctagagg tagaaagggg aagggtgctg 360
gggag 365

```

<210> 390

<211> 221

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (221)

<223> n = A,T,C or G

<400> 390

```

tgcctctcca tcttgcccc gacttctctg tcaggaaagt ggggatggac cccatctgca 60
tacacggntt ctcatgggtg tggaaacatct ctgcttgccg ttcaggaag gcctctggct 120
gctctangag tctgancnga ntcgttgccc cantntgaca naaggaaagg cggagcttat 180
tcaaagtcta gagggagtgg aggagttaag gctggatttc a 221

```

<210> 391

<211> 325

<212> DNA

<213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(325)
 <223> n = A,T,C or G

<400> 391
 tggagcaggt cccgaggcct ccctagagcc tggggccgac tctgtgncga tgcangcttt 60
 ctctcgcgcc cagcctggag ctgtccctgg catctacca caatcagncg aggcgagcag 120
 tagccagggc actgctgcca acagccagtc cnnataccat catgtnaccc ggtgngctct 180
 naantngat ntccanagcc ctacccatcn tagttctgct ctcccaccg ntaccagccc 240
 cactgcccag gaatcctaca gccagtaccc tgtcccgacg tctctaccta ccagtacgat 300
 gagacctccg gctactacta tgacc 325

<210> 392
 <211> 277
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(277)
 <223> n = A,T,C or G

<400> 392
 atattgttta actccttcct ttatatcttt taacattttc atggngaaag gttcacatct 60
 agtctcactt nggcgnagnn ctccctacttg agtctcttcc ccggcctggn ccagtnghaa 120
 antaccanga accgncatgn cttaanaacn ncctgggttn tgggttnntc aatgactgca 180
 tgcagtgcac caccctgtcc actacgtgat gctgtaggat taaagtctca cagtgggcgg 240
 ctgaggatac agcgccgcgt cctgtgttgc tggggaa 277

<210> 393
 <211> 566
 <212> DNA
 <213> Homo sapiens

<400> 393
 actagtccag tgtgggtggaa ttcgcgggccg cgtcgacgga caggtcagct gtctgggtca 60
 gtgatctaca ttctgaagtt gtctgaaaat gtcttcatga tttaaattcag cctaaacgtt 120
 ttgccgggaa cactgcagag acaatgctgt gagtttccaa ccttagccca tctgcgggca 180
 gagaagggtct agtttgtcca tcagcattat catgatatca ggactgggta cttgggttaag 240
 gaggggtcta ggagatctgt cccttttaga gacaccttac ttataatgaa gtatttggga 300
 ggggtgggttt caaaagtaga aatgtcctgt attccgatga tcacacctga aacattttat 360
 catttattaa tcacccctgc ctgtgtctat tattatattc atatctctac gctggaaact 420
 ttctgcctca atgtttactg tgcctttgtt ttgtctagtt tgtgtgttg aaaaaaaaaa 480
 cattctctgc ctgagtttta atttttgtcc aaagttattt taatctatac aattaaaagc 540
 ttttgcctat caaaaaaaaa aaaaaa 566

<210> 394
 <211> 384
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature

<222> (1) ... (384)

<223> n = A,T,C or G

<400> 394

```
gaacatacat gtcccggcac ctgagctgca gtctgacatc atcgccatca cgggcctcgc 60
tgcaaatng gaccgggcca aggctggact gctggagcgt gtgaaggagc tacaggccna 120
gcaggaggac cgggctttaa ggagttttaa gctgagtgtc actgtagacc ccaaatacca 180
tcccaagatt atcgggagaa agggggcagt aattacccaa atccggttg agcatgacgt 240
gaacatccag tttcctgata aggacgatgg gaaccagccc caggaccaa ttaccatcac 300
agggtacgaa aagaacacag aagctgccag ggatgctata ctgagaattg tgggtgaact 360
tgagcagatg gtttctgagg acgt                                     384
```

<210> 395

<211> 399

<212> DNA

<213> Homo sapiens

<400> 395

```
ggcaaaactg tgtgacctca ataagacctc gcagatccaa ggtcaagtat cagaagtgac 60
tctgaccttg gactccaaga cctacatcaa cagcctggct atattagatg atgagccagt 120
tatcagaggt ttcattcatt cggaaattgt ggagtctaag gaaatcatgg cctctgaagt 180
attcacgtct ttccagtacc ctgagttctc tatagagttg cctaacacag gcagaattgg 240
ccagctactt gtctgcaatt gtatcttcaa gaataccctg gccatccctt tgactgacgt 300
caagttctct ttggaaagcc tgggcatctc ctactacag acctctgacc atgggacggg 360
gcagcctggg gagaccatcc aatcccaaat aaaatgcac                                     399
```

<210> 396

<211> 403

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (403)

<223> n = A,T,C or G

<400> 396

```
tggagttntc agtgcaaaca agccataaag cttcagtagc aaattactgt ctacagaaa 60
gacattttca acttctgctc cagctgctga taaaacaaat catgtgttta gcttgactcc 120
agacaaggac aacctgttcc ttcataactc tctagagaaa aaaaggagtt gttagtagat 180
actaaaaaaaa gtggatgaat aatctggata ttttccttaa aaagattcct tgaaacacat 240
taggaaaatg gagggcctta tgatcagaat gctagaatta gtccattgtg ctgaagcagg 300
gtttagggga gggagtgagg gataaaagaa ggaaaaaaag aagagtgaga aaacctattt 360
atcaaagcag gtgctatcac tcaatgttag gccctgctct ttt                                     403
```

<210> 397

<211> 100

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (100)

<223> n = A,T,C or G

<400> 397

actagtnacag tgtgggtggaa ttcgcggccg cgtcgaccta naanccatct ctatagcaaa 60
tccatccccg ctccctgggtg gtnacagaat gactgacaaa 100

<210> 398

<211> 278

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(278)

<223> n = A,T,C or G

<400> 398

gcggccgcgt cgacagcagt tccgccagcg ctgcgccctg ggtgggggatg tgctgcacgc 60
ccacctggac atctggaagt cagcggcctg gatgaaagag cggacttcac ctggggcgat 120
tcactactgt gcctcgacca gtgaggagag ctggaccgac agcgagggtg actcatcatg 180
ctccgggagag cccatccacc tgtggcagtt cctcaaggag ttgctactca agccccacag 240
ctatggccgc ttcattangt ggctcaacaa ggagaagg 278

<210> 399

<211> 298

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(298)

<223> n = A,T,C or G

<400> 399

acggagggtg aggaagcgnc cctgggatcg anaggatggg tcctgncatt gaccncctcn 60
gggggtgccng catggagcgc atgggcgcgg gcctggggcca cggcatggat cgctggggct 120
ccgagatcga gcgcatgggc ctgggtcatgg accgcatggg ctccgtggag cgcattgggct 180
ccggcattga gcgcatgggc ccgctggggc tcgaccacat ggccctccanc attgancgca 240
tgggcccagac catggagcgc attggctctg gcgtggagcn catgggtgcc ggcatggg 298

<210> 400

<211> 548

<212> DNA

<213> Homo sapiens

<400> 400

acatcaacta cttcctcatt ttaaggatat gcagttccct tcatccccctt ttcctgcctt 60
gtacatgtac atgtatgaaa tttccttctc ttaccgaact ctctccacac atcacaagggt 120
caaagaacca cagccttaga agggtaagag ggcaccctat gaaatgaaat ggtgatttct 180
tgagtctctt ttttccacgt ttaaggggccc atggcaggac ttagagttgc gagttaagac 240
tgcagagggc tagagaatta tttcatacag gctttgaggc caccatgtc acttatccccg 300
tataccctct caccatcccc ttgtctactc tgatgcccc aagatgcaac tgggcagcta 360
gttggcccca taattctggg cctttgttgt ttgttttaat tacttgggca tcccaggaag 420
ctttccagtg atctcctacc atgggcccc ctccctgggat caagccccctc ccaggccctg 480
tccccagccc ctccctgcccc agcccacccg cttgccttgg tgctcagccc tcccattggg 540
agcagggtt 548

<210> 401
<211> 355
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(355)
<223> n = A,T,C or G

<400> 401
actgtttcca tgttatgttt ctacacattg ctacctcagt gtccttgga acttagcttt 60
tgatgtctcc aagtagtcca ctttcattta actctttgaa actgtatcat ctttgccaag 120
taagagtggg ggcctatttc agctgctttg acaaaatgac tggctcctga cttaacgttc 180
tataaatgaa tgtgctgaag caaagtgcc atggtggcgg cgaagaagan aaagatgtgt 240
tttgttttgg actctctgtg gtcccttcca atgctgnggg tttccaacca ggggaagggt 300
cccttttgca ttgccaagtg ccataaccat gagcactact ctaccatggn tctgc 355

<210> 402
<211> 407
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(407)
<223> n = A,T,C or G

<400> 402
atggggcaag ctggataaag aaccaagacc cactggagta tgctgtcttc aagaaaccca 60
tctcacatgc ggtggcatac ataggctcaa aataaaggaa tggagaaaaa tatttcaagc 120
aaatggaaaa cagaaaaaag cagggtgttg actcctactt tctgacaaaa cagactatgc 180
gaataaagat aaaaaagaga aggacattac aaaggtggtc ctgacctttg ataaatctca 240
ttgcttgata ccaacctggg ctgttttaat tgcccaaacc aaaaggataa tttgctgagg 300
ttgtggagct tctcccttgc agagagtccc tgatctccca aaatttggtt gagatgtaag 360
gntgattttg ctgacaactc cttttctgaa gttttactca tttccaa 407

<210> 403
<211> 303
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(303)
<223> n = A,T,C or G

<400> 403
cagtatttat agcnaactg aaaagctagt agcaggcaag tctcaaatcc aggcacccaaa 60
tcctaagcaa gagccatggc atggtgaaaa tgcaaaaagg gagtctggcc aatctacaaa 120
tagagaacaa gacctactca gtcattgaaca aaaaggcaga caccaacatg gatctcatgg 180
gggattggat attgtaatta tagagcagga agatgacagt gatcgtcatt tggcacaaca 240
tcttaacaac gaccgaaacc cattattttac ataaacctcc attcggtaac catgttgaaa 300
gga 303

<210> 404
<211> 225
<212> DNA
<213> Homo sapiens

<400> 404
aagtgttaact tttaaaaaatt tagtggattt tgaaaattct tagaggaaaag taaaggaaaa 60
attgttaaatg cactcattta cctttacatg gtgaaagtgc tctcttgatc ctacaaacag 120
acattttcca ctctgttttc catagtgtt aagtgtatca gatgtgttg gcatgtgaat 180
ctccaagtgc ctgtgtaata aataaagtat ctttatttca ttcatt 225

<210> 405
<211> 334
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(334)
<223> n = A,T,C or G

<400> 405
gagctgttat actgtgagtt ctactaggaa atcatcaaatt ctgaggggtg tctggaggac 60
ttcaatacac ctccccccat agtgaatcag cttccagggg gtccagtcct tctccttact 120
tcacccccat cccatgccaa aggaagaccc tccctccttg gctcacagcc ttctctaggc 180
ttcccagtgc ctccaggaca gagtgggtta tgttttcagc tccatccttg ctgtgagtgt 240
ctggtgcggt tgtgcctcca gcttctgctc agtgcttcat ggacagtgtc cagcccatgt 300
cactctccac tctctcanng tggatcccac ccct 334

<210> 406
<211> 216
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(216)
<223> n = A,T,C or G

<400> 406
tttcatacct aatgagggag ttganatnac atnnaaccag gaaatgcatg gatctcaang 60
gaaacaaaca cccaataaac tcggagtggc agactgacaa ctgtgagaca tgcacttgct 120
acnaaacaca aatttntatgt tgcacccttg tttctacacc tgtgggttat gacaaagaca 180
actgccaaag aatnttcaag aaggaggact gccant 216

<210> 407
<211> 413
<212> DNA
<213> Homo sapiens

<400> 407
gctgacttgc tagtatcatc tgcattcatt gaagcacaag aacttcatgc cttgactcat 60
gtaaatgcaa taggattaaa aaataaattt gatatcacat ggaaacagac aaaaaatatt 120
gtacaacatt gcacccagtgc tcagattcta cacctggcca ctgaggaagc aagagttaat 180
cccagaggtc tatgtcctaa tgtgttatgg caaatggatg tcatgcacgt accttcattt 240

```

ggaaaaattgt catttgtcca tgtgacagtt gatacttatt cacatttcat atgggcaacc 300
tgccagacag gagaaagtct tcccatgtta aaagacattt attatcttgt tttcctgtca 360
tgggagttcc agaaaaagtt aaaacagaca atgggccagg ttctgtagta aag          413

```

<210> 408

<211> 183

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(183)

<223> n = A,T,C or G

<400> 408

```

ggagctngcc ctcaattcct ccatntctat gttancatat ttaatgtctt ttggnattaa 60
tnccttaacta gttaatcctt aaagggctan ntaatcctta actagtcctt ccattgtgag 120
cattatcctt ccagtattcn ccttctnttt tatttactcc ttctgggcta cccatgtact 180
ntt                                     183

```

<210> 409

<211> 250

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(250)

<223> n = A,T,C or G

<400> 409

```

cccacgcatg ataagctctt tatttctgta agtcctgcta ggaaatcatc aaatctgacg 60
gtggtttggg ggacctgaac aaacctcctg taattaatca gctttcagtt tctcccccta 120
gtccctcctt caacaacata ggaggatcct ccccttcttt ctgctcacgg ccttatctag 180
gcttcccagt gccccagga cagcgtgggc tatgtttaca gcgcntcctt gctggggggg 240
ggccntatgc                                     250

```

<210> 410

<211> 306

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(306)

<223> n = A,T,C or G

<400> 410

```

ggctggtttg caagaatgaa atgaatgatt ctacagctag gacttaacct tgaaatggaa 60
agtcttgcaa tcccatttgc aggatccgtc tgtgcacatg cctctgtaga gagcagcatt 120
cccagggacc ttggaaacag ttggcactgt aagggtgctt ctccccaaaga cacatcctaa 180
aagggtgttg aatggtgaaa accgcttcct tctttattgc cccttcttat ttatgtgaac 240
nactggttgg ctttttttgn atctttttta aactggaaag ttcaattgng aaaatgaata 300
tcntgc                                     306

```

<210> 411
<211> 261
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(261)
<223> n = A,T,C or G

<400> 411
agagatattn cttaggtnaa agttcataga gttcccatga actatatgac tggccacaca 60
ggatcttttg tatttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
tttaaagtgc tgaaatggaa cagatttcaa aaaaaaaccc cacaatctag ggtgggaaca 180
aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccat cagttccagc 240
cttctctcaa ggngaggcaa a 261

<210> 412
<211> 241
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(241)
<223> n = A,T,C or G

<400> 412
gttcaatgtt acctgacatt tctacaacac cccactcacc gatgtattcg ttgccagtg 60
ggaacatacc agcctgaatt tggaaaaaat aattgtgttt cttgccagg aaatactacg 120
actgactttg atggctccac aaacataacc cagtgtaaaa acagaagatg tggaggggag 180
ctgggagatt tctctgggta cattgaattc ccaaaactacc cangcaatta ccagccaac 240
a 241

<210> 413
<211> 231
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(231)
<223> n = A,T,C or G

<400> 413
aactcttaca atccaagtga ctcactctgtg tgcttgaatc ctttccactg tctcatctcc 60
ctcatccaag tttctagtag cttctctttg ttgtgaagga taatcaaact gaacaacaaa 120
aagtttactc tcctcatttg gaacctaaaa actctcttct tcctgggtct gaggggtcca 180
agaatccttg aatcanttct cagatcattg gggacaccan atcaggaacc t 231

<210> 414
<211> 234
<212> DNA
<213> Homo sapiens

<400> 414

```

actgtccatg aagcactgag cagaagctgg aggcacaacg caccagacac tcacagcaag 60
gatggagctg aaaacataac ccactctgtc ctggaggcac tgggaagcct agagaaggct 120
gtgagccaag gagggagggt cttccttttg catgggatgg ggatgaagta aggagaggga 180
ctggaccccc tggaagctga ttcactatgg ggggaggtgt attgaagtcc tcca      234

```

<210> 415

<211> 217

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(217)

<223> n = A,T,C or G

<400> 415

```

gcataggatt aagactgagt atcttttcta cattctttta acttttctaag gggcacttct 60
caaaacacag accaggtagc aaatctccac tgctctaagg ntctcaccac cacttttctca 120
cacctagcaa tagtagaatt cagtcctact tctgaggcca gaagaatggt tcagaaaaat 180
antggattat aaaaaataac aattaagaaa aataatc      217

```

<210> 416

<211> 213

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(213)

<223> n = A,T,C or G

<400> 416

```

atgcatatnt aaagganact gcctcgcttt tagaagacat ctggnctgct ctctgcatga 60
ggcacagcag taaagctctt tgattcccag aatcaagaac tctccccttc agactattac 120
cgaatgcaag gtggttaatt gaaggccact aattgatgct caaatagaag gatattgact 180
atattggaac agatggagtc tctactacaa aag      213

```

<210> 417

<211> 303

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(303)

<223> n = A,T,C or G

<400> 417

```

nagtcttcag gcccacagc gaagttcaca ctggagagaa gtcatacata tgtactgtat 60
gtgggaaagg ctttactctg agttcaaadc ttcaagccca tcagagagtc cacactggag 120
agaagccata caaatgcaat gagtgtggga agagcttcag gagggattcc cattatcaag 180
ttcatctagt ggtccacaca ggagagaaac cctataaatg tgagatatgt gggaagggct 240
tcantcaaag ttcgtatctt caaatccatc ngaaggncca cagtatanan aaacctttta 300
agt      303

```


<210> 418
<211> 328
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(328)
<223> n = A,T,C or G

<400> 418
tttttgccg tgggtggggca gggacggggac angagtctca ctctgttgcc caggctggag 60
tgcacaggca tgatctcggc tcaactacaac ccctgcctcc catgtccaag cgattcttgt 120
gcctcagcct tccctgtagc tagaattaca ggcacatgcc accacaccca gctagttttt 180
gtatttttag tagagacagg gtttcacccat gttggccagg ctggtctcaa actcctnacc 240
tcagnggtca ggctgggtctc aaactcctga cctcaagtga tctgcccacc tcagcctccc 300
aaagtgtan gattacaggc cgtgagcc 328

<210> 419
<211> 389
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(389)
<223> n = A,T,C or G

<400> 419
cctcctcaag acggcctgtg gtccgcctcc cggcaaccaa gaagcctgca gtgccatagt 60
acccctgagc catggactgg agcctgaaag gcagcgtaca ccctgctcct gatcttgctg 120
cttggttccct ctctgtggct ccattcatag cacagtgtgt gcaactgaggc ttgtgcaggc 180
cgagcaaggc caagctggct caaagagcaa ccagtcaact ctgccacggg gtgccaggca 240
ccgggttctcc agccaccaac ctcaactcgt cccgcaaagt gcacatcagt tcttctaccc 300
taaaggtagg accaaagggc atctgctttt ctgaagtccct ctgctctatc agccatcacg 360
tggcagccac tcnggctgtg tcgacgcgg 389

<210> 420
<211> 408
<212> DNA
<213> Homo sapiens

<400> 420
gttctctcta actcctgcca gaaacagctc tcctcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggct tcttggttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgactttggg gtttcggcat ggagaccgaa 180
gtcccatatga cacccttccc actgacccca taaaggaatc ctcatggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attccttgaat gagtcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg aagtgtatg acaaacctgg caagcccg 408

<210> 421
<211> 352
<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(352)

<223> n = A,T,C or G

<400> 421

```
gctcaaaaat ctttttactg atnggcatgg ctacacaatc attgactatt acggaggcca 60
gaggagaatg aggcctggcc tgggagccct gtgcctacta naagcacatt agattatcca 120
ttcactgaca gaacaggtct tttttgggtc cttcttctcc accacnatac acttgcagtc 180
ctccttcttg aagattcttt ggcagttgtc tttgtcataa cccacaggtg tagaaacaag 240
gggtgcaacat gaaatttctg tttcgtagca agtgcattgc tcacaagttg gcangtctgc 300
cactccgagt ttattgggtg tttgtttcct ttgagatcca tgcatttcct gg 352
```

<210> 422

<211> 337

<212> DNA

<213> Homo sapiens

<400> 422

```
atgccaccat gctggcaatg cagcgggcg tccaaggcct gcatatccag cccaagctgg 60
cgatgatcga cggcaaccgt tgcccgaagt tgccgatgcc agccgaagcg gtgggtcaagg 120
gcatagcaaa ggtgccggcg atcgcgggcg cgtcaatcct ggccaaggct agccgtgac 180
gtgaaatggc agctgtcgaa ttgatctacc cgggttatgg catcggcggg cataagggtc 240
atccgacacc ggtgcacctg gaagccttgc agcggctggg gccgacgccg attcaccgac 300
gcttcttccg ccggtacggc tggcctatga aaattat 337
```

<210> 423

<211> 310

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(310)

<223> n = A,T,C or G

<400> 423

```
gctcaaaaat ctttttactg atatggcatg gctacacaat cattgactat tagaggccag 60
aggagaatga ggcctggcct gggagccctg tgccctactan aagcncatta gattatccat 120
tactgacag aacaggtctt ttttgggtcc ttcttctcca ccacgatata cttgcagtc 180
tccttcttga agattctttg gcagttgtct ttgtcataac ccacaggtgt anaaacaagg 240
gtgcaacatg aaatttctgt ttcgtagcaa gtgcattgtc cacagttgtc aagtctgccc 300
tccgagttta 310
```

<210> 424

<211> 370

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(370)

<223> n = A,T,C or G

<400> 424

```

gctcaaaaat ctttttactg ataggcatgg ctacacaatc attgactatt agaggccaga 60
ggagaatgag gcctggcctg ggagccctgt gcctactaga agcacattag attatccatt 120
cactgacaga acaggctctt tttgggtcct tcttctccac cacgatatac ttgcagtcct 180
ccttcttgaa gattcttttg cagttgtctt tgtcataacc cacagggtga gaaacatcct 240
ggttgaatct cctggaactc cctcattagg tatgaaatag catgatgcat tgcataaagt 300
cacgaagggt gcaaagatca caacgctgcc cagganaaca ttcattgtga taagcaggac 360
tccgtcgacg                                     370

```

<210> 425

<211> 216

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(216)

<223> n = A,T,C or G

<400> 425

```

aattgctatn ntttattttg ccaactcaaaa taattaccaa aaaaaaaaaa tnttaaataga 60
taacaacnca acatcaaggn aaananaaca ggaatggntg acntngcata aatnggccga 120
anattatcca ttatnttaag ggttgacttc aggntacagc acacagacaa acatgcccag 180
gaggntntca ggaccgctcg atgtnttntg aggagg                                     216

```

<210> 426

<211> 596

<212> DNA

<213> Homo sapiens

<400> 426

```

cttccagtga ggataaccct gttgccccgg gccgaggttc tccattaggc tctgattgat 60
tggcagtcag tgatggaagg gtgttctgat cattccgact gcccgaaggg tcgctggcca 120
gctctctgtt ttgctgagtt ggcagtagga cctaatttgt taattaagag tagatggtga 180
gctgtccttg tattttgatt aacctaattg ctttcccagc acgactcgga ttcagctgga 240
gacatcacgg caacttttaa tgaaatgatt tgaagggcca ttaagaggca cttcccgtta 300
ttaggcagtt catctgcact gataacttct tggcagctga gctggtcgga gctgtggccc 360
aaacgcacac ttggcttttg gttttgagat acaactctta atcttttagt catgcttgag 420
ggtggatggc cttttcagct ttaaccctaa ttgcactgcc ttggaagtgt agccaggaga 480
atacactcat atactcgtgg gcttagaggc cacagcagat gtcattggtc tactgcctga 540
gtcccgtggg tcccatccca ggaccttcca tcggcgagta cctgggagcc cgtgct      596

```

<210> 427

<211> 107

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(107)

<223> n = A,T,C or G

<400> 427

```

gaagaattca agttagggtt attcaaaggg cttacngaga atcctanacc caggncccag 60

```

cccgggagca gccttanaga gctcctgttt gactgcccgg ctcagng

107

<210> 428

<211> 38

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(38)

<223> n = A,T,C or G

<400> 428

gaacttcena anaangactt tattcactat ttacatt

38

<210> 429

<211> 544

<212> DNA

<213> Homo sapiens

<400> 429

ctttgctgga cggaataaaa gtggacgcaa gcatgacctc ctgatgaggg cgctgcattt 60
 attgaagagc ggctgcagcc ctgcggttca gattaaaatc cgagaattgt atagacgccg 120
 atatccacga actcttgaag gactttctga tttatccaca atcaaatcat cggttttcag 180
 tttggatggg ggctcatcac ctgtagaacc tgacttggcc gtggctggaa tccactcgtt 240
 gccttccact tcagttacac ctcactcacc atcctctcct gttggttctg tgctgcttca 300
 agatactaag cccacatttg agatgcagca gccatctccc ccaattcctc ctgtccatcc 360
 tgatgtgcag ttaaaaaatc tgccctttta tgatgtcctt gatgttctca tcaagccac 420
 gagtttagtt caaagcagta ttcagcgatt tcaagagaag ttttttatTT ttgctttgac 480
 acctcaacaa gttagagaga tatgcatatc cagggatttt ttgccagggtg gtaggagaga 540
 ttat 544

<210> 430

<211> 507

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(507)

<223> n = A,T,C or G

<400> 430

cttatcncaa tggggctccc aaacttggct gtgcagtgga aactccgggg gaattttgaa 60
 gaacactgac acccatcttc caccgccaga ctctgattta attgggctgc agtgagaaca 120
 gagcatcaat ttaaaaagct gcccagaatg ttntcctggg cagcgttggt atctttgccn 180
 ccttcgtgac tttatgcaat gcatcatgct atttcatacc taatgagggg gttccaggag 240
 attcaaccag gatgtttcta cncctgtggg ttatgacaaa gacaactgcc aaagaatntt 300
 caagaaggag gactgcaagt atatcgtggg ggagaagaag gacccaaaaa agacctgttc 360
 tgtcagtga tggataatct aatgtgcttc tagtaggcac agggctccca ggccaggcct 420
 cattctctc tggcctctaa tagtcaatga ttgtgtagcc atgcctatca gtaaaaagat 480
 ttttgagcaa aaaaaaaaaa aaaaaaa 507

<210> 431

<211> 392

<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = A,T,C or G

<400> 431
gaaaattcag aatggataaa aacaaatgaa gtacaaaata tttcagattt acatagcgat 60
aaacaagaaa gcacttatca ggaggactta caaatggaag tacactctan aaccatcatc 120
tatcatggct aaatgtgaga ttagcacagc tgtattattt gtacattgca aacacctaga 180
aagagatggg aaacaaaatc ccaggagttt tgtgtgtgga gtcttgggtt ttccaacaga 240
catcattcca gcattctgag attagggnga ttggggatca ttctggagtt ggaatgttca 300
acaaaagtga tgttgttagg taaaatgtac aacttctgga tctatgcaga cattgaaggt 360
gcaatgagtc tggcttttac tctgctgttt ct 392

<210> 432
<211> 387
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(387)
<223> n = A,T,C or G

<400> 432
ggtatccnta cataatcaaa tatagctgta gtacatgttt tcattggngt agattaccac 60
aaatgcaagg caacatgtgt agatctcttg tcttattctt ttgtctataa tactgtattg 120
ngtagtccaa gctctcggn a gtccagccac tngaaacat gctcccttta gattaacctc 180
gtggacnctn ttgttgnatt gtctgaactg tagngccctg tatttttgctt ctgtctgnga 240
attctgttgc ttctggggca tttccttgng atgcagagga ccaccacaca gatgacagca 300
atctgaattg ntccaatcac agctgcgatt aagacatact gaaatcgtac aggaccggga 360
acaacgtata gaacactgga gtccttt 387

<210> 433
<211> 281
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(281)
<223> n = A,T,C or G

<400> 433
ttcaactagc anagaanact gcttcagggg gtgtaaaatg aaaggcttcc acgcagttat 60
ctgattaaag aacactaaga gagggacaag gctagaagcc gcaggatgtc tacactatag 120
caggcnctat ttgggttggc tggaggagct gtggaaaaca tggagagatt ggcgctggag 180
atcgccgtgg ctattcctcn ttgntattac accagngagg ntctctgtnt gccactgggt 240
tnnaaaaccg ntatacaata atgatagaat aggacacaca t 281

<210> 434
<211> 484

<212> DNA

<213> Homo sapiens

<400> 434

```

ttttaaaata agcatttagt gctcagtccc tactgagtac tctttctctc ccctcctctg 60
aatttaattc tttcaacttg caatttgcaa ggattacaca tttcactgtg atgtatatgt 120
tgttgcaaaa aaaaaaaagt gtctttgttt aaaattactt ggtttgtaga tccatcttgc 180
tttttcccca ttggaactag tcattaaccc atctctgaac tggtagaaaa acatctgaag 240
agctagtcta tcagcatctg acaggtgaat tggatgggtc tcagaaccat ttcacccaga 300
cagcctgttt ctatcctgtt taataaatta gtttgggttc tctacatgca taacaaaccc 360
tgctccaatc tgtcacataa aagtctgtga cttgaagttt agtcagcacc cccaccaaac 420
tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataaag taccatgtc 480
tta

```

484

<210> 435

<211> 424

<212> DNA

<213> Homo sapiens

<400> 435

```

gcgcgcgtca gagcaggtca ctttctgcct tccacgtcct ccttcaagga agccccatgt 60
gggtagcttt caatatcgca gggtcttact cctctgcctc tataagctca aaccaccaa 120
cgatcgggca agtaaaccac ctccctcgcc gacttcggaa ctggcgagag ttcagcgag 180
atgggcctgt ggggaggggg caagatagat gagggggagc ggcattgtgc ggggtgaccc 240
cttgagagaga ggaaaaggc cacaagaggg gctgccaccg ccactaacgg agatggccct 300
ggtagagacc tttgggggtc tggaaacctt ggactcccca tgctctaact cccacactct 360
gctatcagaa acttaaaactt gaggattttc tctgtttttc actcgcaata aattcagagc 420
aaac

```

424

<210> 436

<211> 667

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (667)

<223> n = A,T,C or G

<400> 436

```

accttgggaa nactctcaca atataaaggg tcgtagactt tactccaaat tccaaaaagg 60
tcctggccat gtaatcctga aagttttccc aaggtagcta taaaatcctt ataaggggtg 120
agcctcttct ggaattcctc tgatttcaaa gtctcactct caagttcttg aaaacgaggg 180
cagttcctga aaggcaggta tagcaactga tcttcagaaa gaggaactgt gtgcaccggg 240
atgggctgcc agagtaggat aggattccag atgctgacac cttctggggg aaacaggggt 300
gccaggtttg tcatagcact catcaaagtc cgggtcaacgt ctgtgcttcg aatataaacc 360
tgttcatgtt tataggactc attcaagaat tttctatatc tctttcttat atactctca 420
agttcataat gctgctccat gcccagctgg gtgagttggc caaatccttg tggccatgag 480
gattccttta tggggtcagt gggaaagggt tcaatgggac ttcgggtctc atgccgaaac 540
accaaagtca caaacttcaa ctcttgggt agtacacttc ggtctagcca gaaaaaaagc 600
agaaacaaga agccaaggct aaggcttgct gccctgccag gaggaggggt gcagctctca 660
tgttgag

```

667

<210> 437

<211> 693

<212> DNA

<213> Homo sapiens

<400> 437

```

ctacgtctca accctcattt ttaggtaagg aatcttaagt ccaaagatat taagtgactc 60
acacagccag gtaaggaaaag ctggattggc acactaggac tctaccatac cgggttttgt 120
taaagctcag gttaggaggc tgataagctt ggaaggaaact tcagacagct ttttcagatc 180
ataaaagata attcttagcc catgttcttc tccagagcag acctgaaatg acagcacagc 240
aggtactcct ctattttcac ccctcttgct tctactctct ggcagtcaga cctgtgggag 300
gccatgggag aaagcagctc tctggatggt tgtacagatc atggactatt ctctgtggac 360
catttctcca ggttacccta ggtgtcacta ttgggggggac agccagcatc tttagctttc 420
atltgagttt ctgtctgtct tcagtagagg aaacttttgc tcttcacact tcacatctga 480
acacctaact gctgttgctc ctgagggtgt gaaagacaga tatagagctt acagtattta 540
tcctatttct aggcactgag ggctgtgggg taccttgtgg tgccaaaaca gatcctgttt 600
taaggacatg ttgcttcaga gatgtctgta actatctggg ggctctgttg gctctttacc 660
ctgcatcatg tgctctcttg gctgaaaatg acc                                     693

```

<210> 438

<211> 360

<212> DNA

<213> Homo sapiens

<400> 438

```

ctgcttatca caatgaatgt tctcctgggc agcgttgtga tctttgccac ctctgtgact 60
ttatgcaatg catcatgcta tttcatacct aatgagggag ttccaggaga ttcaaccagg 120
atgtttctac acctgtgggt tatgacaaag acaactgcca aagaatcttc aagaaggagg 180
actgcaagta tatctggtgg agaagaagga cccaaaaaag acctgttctg tcagtgaatg 240
gataatctaa tgtgcttcta gtaggcacag ggctcccagc ccaggcctca ttctcctctg 300
gcctctaata gtcaataatt gtgtagccat gcctatcagt aaaaagattt ttgagcaaac 360

```

<210> 439

<211> 431

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(431)

<223> n = A,T,C or G

<400> 439

```

gttcctnnta actcctgcc a gaaacagctc tctcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggct tcttgtttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgactttggg gtttcggcat ggagaccgaa 180
gtcccattga cacctttccc actgaccca taaaggaatc ctcatggcca caaggatttg 240
gccaaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgtcga cgcggccgcg 420
aatttagtag t                                     431

```

<210> 440

<211> 523

<212> DNA

<213> Homo sapiens

<400> 440

```
agagataaaag cttaggtcaa agttcataga gttcccatga actatatgac tggccacaca 60
ggatcttttg tatttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
tttaaagtgc tgaaatggaa cagatttcaa aaaaaaacc cacaatctag ggtgggaaca 180
aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttacccat cagttccagc 240
cttctctcaa ggagaggcaa agaaaggaga tacagtggag acatctggaa agttttctcc 300
actggaaaac tgctactatc tgtttttata tttctgttaa aatatatgag gctacagaac 360
taaaaattaa aacctctttg tgtcccttgg tcctggaaca tttatgttcc ttttaaagaa 420
acaaaaatca aactttacag aaagatttga tgtatgtaat acatatagca gctcttgaag 480
tatatatatc atagcaaata agtcactga tgagaacaag cta 523
```

<210> 441

<211> 430

<212> DNA

<213> Homo sapiens

<400> 441

```
gttcctccta actcctgcc aaacagctc tcctcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggtc tcttgtttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgactttggt gtttcggcat ggagaccgaa 180
gtccattga cacctttccc actgacccca taaaggaatc ctcattggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgtcga cgcggccgcg 420
aatttagtag 430
```

<210> 442

<211> 362

<212> DNA

<213> Homo sapiens

<400> 442

```
ctaaggaatt agtagtggtc ccatcacttg tttggagtgt gctattctaa aagattttga 60
tttcttgga tgacaattat attttaactt tgggtgggga aagagttata ggaccacagt 120
cttactttct gatacttgta aattaatctt ttattgcact tgttttgacc attaagctat 180
atgtttagaa atgggtcatt tacggaaaaa ttagaaaaat tctgataata gtgcagaata 240
aatgaattaa tgttttactt aatttatatt gaactgtcaa tgacaaataa aaattctttt 300
tgattatttt ttgttttcat ttaccagaat aaaaactaag aattaaaagt ttgattacag 360
tc 362
```

<210> 443

<211> 624

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(624)

<223> n = A,T,C or G

<400> 443

```
tttttttttt gcaacacaat atacatcaca gtgaaatgtg taatccttgc aaattgcaag 60
ttgaaagaat taaattcaga ggaggggaga gaaagagtac tcagtaggga ctgagcacta 120
aatgcttatt ttaaaagaaa tgtaaagagc agaaagcaat tcaggctacc ctgccttttg 180
tgctggctag tactccggtc ggtgtcagca gcacgtggca ttgaacattg caatgtggag 240
```



```

cccaaaccac agaaaatggg gtgaaattgg ccaactttct attaacttgg cttcctgttt 300
tataaaatat tgtgaataat atcacctact tcaaagggca gttatgaggc ttaaataaac 360
taacgcctac aaaacactta aacatagata acataggtgc aagtactatg tatctggtac 420
atggtaaaca tccttattat taaagtcaac gctaaaatga atgtgtgtgc atatgctaata 480
agtacagaga gagggcactt aaaccaacta agggcctgga gggaagggtt cctggaaaga 540
ngatgcttgt gctgggtcca aatcttggtc tactatgacc ttggccaaat tatttaaact 600
ttgtccctat ctgctaaaca gatac                                     624

```

<210> 444

<211> 425

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(425)

<223> n = A,T,C or G

<400> 444

```

gcacatcatt nntcttgcatt tctttgagaa taagaagatc agtaaatagt tcagaagtgg 60
gaagctttgt ccaggcctgt gtgtgaaccc aatgttttgc ttagaaatag aacaagtaag 120
ttcattgcta tagcataaca caaaatttgc ataagtggtg gtcagcaaat ccttgaatgc 180
tgcttaaatgt gagaggttgg taaaatcctt tgtgcaacac tctaactccc tgaatgtttt 240
gctgtgctgg gacctgtgca tgccagacaa ggccaagctg gctgaaagag caaccagcca 300
cctctgcaat ctgccacctc ctgctggcag gatttgtttt tgcacacctg gaagagccaa 360
ggaggcacca gggcataagt gagtagactt atggtcgacg cggccgcgaa tttagtagta 420
gtaga                                     425

```

<210> 445

<211> 414

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(414)

<223> n = A,T,C or G

<400> 445

```

catgtttatg nttttggatt actttgggca cctagtgttt ctaaatcgct tatcattctt 60
ttctgttttt caaaagcaga gatggccaga gtctcaacaa actgtatctt caagtctttg 120
tgaaattctt tgcattgtgc agattattgg atgtagtctt ctttaactag catataaatc 180
tggtgtgttt cagataaatg aacagcaaaa tgtggtggaa ttaccatttg gaacattgtg 240
aatgaaaaat tgtgtctcta gattatgtaa caaataacta tttcctaacc attgatcttt 300
ggatttttat aatcctactc acaaatgact aggttctctc tcttgtattt tgaagcagtg 360
tgggtgctgg attgataaaa aaaaaaaaag tcgacgcggc cgcaatttta gtag      414

```

<210> 446

<211> 631

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(631)

<223> n = A,T,C or G

<400> 446

```
acaaattaga anaaagtgcc agagaacacc acataccttg tccggaacat tacaatggct 60
tctgcatgca tgggaagtgt gagcattcta tcaatatgca ggagccatct tgcaggtgtg 120
atgctgggta tactggacaa cactgtgaaa aaaaggacta cagtgttcta tacgttggtc 180
ccggtcctgt acgatttcag tatgtcttaa tcgcagctgt gattggaaca attcagattg 240
ctgtcatctg tgtggtggtc ctctgcatca caagggccaa actttaggta atagcattgg 300
actgagattt gtaaaccttc caaccttcca ggaaatgccc cagaagcaac agaattcaca 360
gacagaagca aaatacaggg cactacagtt cagacaatac aacaagagcg tccacgaggt 420
taatctaaag ggagcatggt tcacagtggc tggactaccg agagcttgga ctacacaata 480
cagtattata gacaaaagaa taagacaaga gatctacaca tgttgccctg catttggtgt 540
aatctacacc aatgaaaaca tgtactacag ctatatttga ttatgtatgg atatatttga 600
aatagtatac attgtcttga tgttttttct g                                     631
```

<210> 447

<211> 585

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (585)

<223> n = A,T,C or G

<400> 447

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cctggccatg taatcctgaa agttttccca aggtagctat aaaatcctta taagggtgca 120
gcctcttctg gaattcctct gatttcaaag tctcactctc aagttcttga aaacgagggc 180
agttcctgaa aggcaggtat agcaactgat cttcagaaag aggaactgtg tgcaccggga 240
tgggctgcca gagtaggata ggattccaga tgcgtgacacc ttctggggga aacagggctg 300
ccagggttgt catagcactc atcaaagtcg ggtcaacgtc tgtgcttcga atataaacct 360
gttcatgttt ataggactca ttcaagaatt ttctatatct ctttcttata tactctccaa 420
gttcataatg ctgctccatg cccagctggg tgagttggcc aaatccttgt ggccatgagg 480
attcctttat ggggtcagtg ggaaagggtg caatgggact tcggtctcca tgccgaaaca 540
ccaaagtcac aaacttcaac tccttggtca gtacacttcg gtcta                                     585
```

<210> 448

<211> 93

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (93)

<223> n = A,T,C or G

<400> 448

```
tgctcgtggg tcattctgan ncccgaactg accntgccag ccctgccgan gggccnccat 60
ggctccctag tgccctggag agganggggc tag                                     93
```

<210> 449

<211> 706

<212> DNA

<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(706)
<223> n = A,T,C or G

<400> 449
ccaagtcat gctntgtgct ggacgctgga caggggggcaa aagcnnttgc tcgtgggtca 60
ttctgancac cgaactgacc atgccagccc tgccgatggt cctccatggc tccctagtgc 120
cctggagagg aggtgtctag tcagagagta gtcctggaag gtggcctctg ngaggagcca 180
cggggacagc atcctgcaga tggtcgggcg cgtcccattc gccattcagg ctgcgcaact 240
gttgggaagg gcgatcggtg cgggcctctt cgctattacg ccagctggcg aaagggggat 300
gtgctgcaag gcaattgaat tgggtaacgc caggggtttc ccagtcncga cgttgtaaaa 360
cgacggccag tgaattgaat ttaggtgacn ctatagaaga gctatgacgt cgcattgcacg 420
cgtacgtaag cttggatcct ctagagcggc cgcctactac tactaaattc gcggccgcgt 480
cgacgtggga tccnactga gagagtggag agtgacatgt gctggacnct gtccatgaag 540
cactgagcag aagctggagg cacaacgcnc cagacactca cagctactca ggaggctgag 600
aacaggttga acctgggagg tggaggttgc aatgagctga gatcaggccn ctgcncccca 660
gcatggatga cagagtgaag ctccatctta aaaaaaaaaa aaaaaa 706

<210> 450
<211> 493
<212> DNA
<213> Homo sapiens

<400> 450
gagacggagt gtcactctgt tgcccaggct ggagtgcagc aagacactgt ctaagaaaaa 60
acagttttta aaggtaaaaa aacataaaaa gaaatatcct atagtggaaa taagagagtc 120
aaatgaggct gagaacttta caaagggatc ttacagacat gtcgccaata tcaactgcatg 180
agcctaagta taagaacaac ctttggggag aaaccatcat ttgacagtga ggtacaattc 240
caagtcagggt agtgaaatgg gtggaattaa actcaaatta atcctgccag ctgaaacgca 300
agagacactg tcagagagtt aaaaagttag ttctatccat gaggtgattc cacagtcttc 360
tcaagtcaac acatctgtga actcacagac caagttctta aaccactgtt caaactctgc 420
tacacatcag aatcacctgg agagctttac aaactcccat tgccgagggt cgacgcggcc 480
gcgaatttag tag 493

<210> 451
<211> 501
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(501)
<223> n = A,T,C or G

<400> 451
gggcgcgtcc cattcgccat tcaggctgcg caactgttgg gaagggcgat cgggtgcgggc 60
ctcttcgcta ttacgccagc tggcgaaagg gggatgtgct gcaaggcgat taagttgggt 120
aacgccaggg ttttccagc cncgacgttg taaaacgacg gccagtgaat tgaatttagg 180
tgacnctata gaagagctat gacgtcgcat gcacgcgtac gtaagcttgg atcctctaga 240
gcggccgcct actactacta aattcgcggc cgcgtcgacg tgggatccnc actgagagag 300
tggagagtga catgtgctgg acnctgtcca tgaagcactg agcagaagct ggaggcacia 360
cgcncagac actcacagct actcaggagg ctgagaacag gttgaacctg ggaggtggag 420
gttgcaatga gctgagatca ggccnctgcn ccccgagcatg gatgacagag tgaaactcca 480

tctttaaaaaa aaaaaaaaaa a

501

<210> 452

<211> 51

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(51)

<223> n = A,T,C or G

<400> 452

agacggtttc accnttacaa cnccttttag gatgggnntt ggggagcaag c

51

<210> 453

<211> 317

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(317)

<223> n = A,T,C or G

<400> 453

tacatcttgc tttttcccca ttggaactag tcattaaccc atctctgaac tggtagaaaa 60
 acatctgaag agctagtcta tcagcatctg gcaagtgaat tggatggttc tcagaaccat 120
 ttcacccana cagcctgttt ctatcctgtt taataaatta gtttgggttc tctacatgca 180
 taacaaaccc tgctccaatc tgtcacataa aagtctgtga cttgaagttt antcagcacc 240
 cccaccaaac tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataagg 300
 taccatgtc tttatta 317

<210> 454

<211> 231

<212> DNA

<213> Homo sapiens

<400> 454

ttcgaggtag aatcaactct cagagtgtag tttccttcta tagatgagtc agcattaata 60
 taagccacgc cagctctttg aaggagtctt gaattctcct ctgctcactc agtagaacca 120
 agaagaccaa attcttctgc atcccagctt gcaaacaaaa ttgttcttct aggtctccac 180
 ccttctttt tcagtgttcc aaagctctc acaatttcat gaacaacagc t 231

<210> 455

<211> 231

<212> DNA

<213> Homo sapiens

<400> 455

taccaaagag ggcataataa tcagtctcac agtaggggttc accatcctcc aagtgaaaaa 60
 cattgttccg aatgggcttt ccacaggcta cacacacaaa acaggaaaca tgccaagttt 120
 gtttcaacgc attgatgact tctccaagga tcttctttg gcatcgacca cattcagggg 180
 caaagaattt ctcatagcac agctcacaat acagggtctc tttctcctct a 231

<210> 456
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 456
 ttggcaggta cccttacaaa gaagacacca taccttatgc gttattaggt ggaataatca 60
 ttccattcag tattatcggt attattcttg gagaaaccct gtctgtttac tgtaaccttt 120
 tgcactcaaa ttcctttatc aggaataact acatagccac tatttacaaa gccattggaa 180
 cctttttatt tgggtgcagct gctagtcagt ccctgactga cattgccaag t 231

<210> 457
 <211> 231
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(231)
 <223> n = A,T,C or G

<400> 457
 cgaggtagccc aggggtctga aaatctctnn tttantagtc gatagcaaaa ttgttcatca 60
 gcattcctta atatgatctt gctataatta gatttttctc cattagagtt catacagttt 120
 tatttgattt tattagcaat ctctttcaga agacccttga gatcattaag ctttgtatcc 180
 agttgtctaa atcgatgcct catttcctct gaggtgtcgc tggcttttgc g 231

<210> 458
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 458
 aggtctgggt cccccactt ccactcccct ctactctctc taggactggg ctgggccaag 60
 agaagagggg tggttaggga agccgttgag acctgaagcc ccaccctcta ctttccttca 120
 acaccctaac cttgggtaac agcatttgga attatcattt gggatgagta gaatttccaa 180
 ggtcctgggt taggcatttt ggggggccag accccaggag aagaagattc t 231

<210> 459
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 459
 ggtaccgagg ctcgctgaca cagagaaacc ccaacgcgag gaaaggaatg gccagccaca 60
 ccttcgcgaa acctgtggtg gccaccagt cctaacggga caggacagag agacagagca 120
 gccctgcact gttttccctc caccacagcc atcctgtccc tcattggctc tgtgctttcc 180
 actatacaca gtcaccgtcc caatgagaaa caagaaggag caccctccac a 231

<210> 460
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 460

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gcaggtataa catgctgcaa caacagatgt gactaggaac ggccggtgac atggggaggg 60
cctatcaccc tattcttggg ggctgcttct tcacagtgat catgaagcct agcagcaa at 120
cccacctccc cacacgcaca cggccagcct ggagcccaca gaagggtcct cctgcagcca 180
gtggagcttg gtccagcctc cagtccaccc ctaccaggct taaggataga a 231
```

<210> 461

<211> 231

<212> DNA

<213> Homo sapiens

<400> 461

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cgaggtttga gaagctctaa tgtgcagggg agccgagaag caggcggcct agggaggggtc 60
gcgtgtgctc cagaagagtg tgtgcatgcc agaggggaaa caggcgcctg tgtgtcctgg 120
gtggggttca gtgaggagtg ggaaattggt tcagcagaac caagccgttg ggtgaataag 180
agggggattc catggcactg atagagccct atagtctcag agctgggaat t 231
```

<210> 462

<211> 231

<212> DNA

<213> Homo sapiens

<400> 462

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aggtaccctc attgtagcca tgggaaaatt gatgttcagt ggggatcagt gaattaaatg 60
gggtcatgca agtataaaaa ttaaaaaaaa aagacttcat gcccaatctc atatgatgtg 120
gaagaactgt tagagagacc aacagggtag tgggttagag atttccagag tcttacattt 180
tctagaggag gtatttaatt tcttctcact catccagtgt tgtatttagg a 231
```

<210> 463

<211> 231

<212> DNA

<213> Homo sapiens

<400> 463

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tactccagcc tgggtgacaga gcgagaccct atcaccgccc cccacccccc caaaaaaaaa 60
actgagtaga caggtgtcct cttggcatgg taagtcttaa gtccccctcc agatctgtga 120
catttgacag gtgtcttttc ctctggacct cggtgtcccc atctgagtga gaaaaggcag 180
tggggagggtg gatcttccag tcgaagcggg atagaagccc gtgtgaaaag c 231
```

<210> 464

<211> 231

<212> DNA

<213> Homo sapiens

<400> 464

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gtactctaag attttatcta agttgccttt tctgggtggg aaagttaa ac cttagtgact 60
aaggacatca catatgaaga atgtttaagt tggagggtggc aacgtgaatt gcaaacaggg 120
cctgcttcag tgactgtgtg cctgtagtcc cagctactcg ggagtctgtg tgaggccagg 180
ggtgccagcg caccagctag atgctctgta acttctaggg cccattttcc c 231
```

<210> 465

<211> 231

<212> DNA

<213> Homo sapiens

<400> 465

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catgttggtg tagctgtggt aatgctggct gcatctcaga caggggttaac ttcagctcct 60
gtggcaaatt agcaacaaat tctgacatca tatttatggt ttctgtatct ttgttgatga 120
aggatggcac aattttttgct tgtgttcata atatactcag attagttcag ctccatcaga 180
taaactggag acatgcagga cattagggta gtgttgtagc tctggtaatg a 231

```

<210> 466

<211> 231

<212> DNA

<213> Homo sapiens

<400> 466

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caggtacctc tttccattgg atactgtgct agcaagcatg ctctccgggg tttttttaat 60
ggccttcgaa cagaacttgc cacataccca ggtataatag tttctaacat ttgccagga 120
cctgtgcaat caaatattgt ggagaattcc ctagctggag aagtcacaaa gactataggc 180
aataatggag accagtccca caagatgaca accagtcggt gtgtgcggt g 231

```

<210> 467

<211> 311

<212> DNA

<213> Homo sapiens

<400> 467

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gtacaccctg gcacagtcca atctgaactg gttcggcact catctttcat gagatggatg 60
tggcggcttt tctccttttt catcaagact cctcagcagg gagccagac cagcctgcac 120
tgtgccttaa cagaaggctt tgagattcta agtgggaatc atttcagtga ctgtcatgtg 180
gcatgggtct ctgcccagc tctgaatgag actatagcaa ggcggtgtg ggacgtcagt 240
tgtgacctgc tgggcctccc aatagactaa caggcagtgc cagttggacc caagagaaga 300
ctgcagcaga c 311

```

<210> 468

<211> 3112

<212> DNA

<213> Homo sapiens

<400> 468

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cattgtgttg ggagaaaaac agagggggaga tttgtgtggc tgcagccgag ggagaccagg 60
aagatctgca tgggtgggaag gacctgatga tacagagttt gataggagac aattaaaggc 120
tggaaggcac tggatgcctg atgatgaagt ggactttcaa actggggcac tactgaaacg 180
atgggatggc cagagacaca ggagatgagt tggagcaagc tcaataacaa agtggttcaa 240
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```

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<210> 469

<211> 2229

<212> DNA

<213> Homo sapiens

<400> 469

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ctaaaaatac aaaaattagc tgggcgtgct ggtgcatgcc tgtaatccca gcccacacac 2220
aatggaatt                                     2229

```

<210> 470

<211> 2426

<212> DNA

<213> Homo sapiens

<400> 470

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gtaaattctt tattgccagg agtgaaccct aaagtggctc acaagagtgc cctatttctt 60
tcaattaact acaaggacaa acacatctca aagttgagat aagtgaccag tatgatttgc 120
caaaattcta aagcgcactc accatgaaat ggataaagggt tacctttggg gatttgcact 180
gcatgaattc tgtgaaaagc ttgttgata ttgtgataga gatagagaaa tgaagtatat 240
tatataagat actatgaggt tccctgcctt tgcttcacat cccaggctta caaacgtgcc 300
ccataaacat tccctctgtg gctcttgcac ttcatatatt tatctaaact cttataatca 360
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2426

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812

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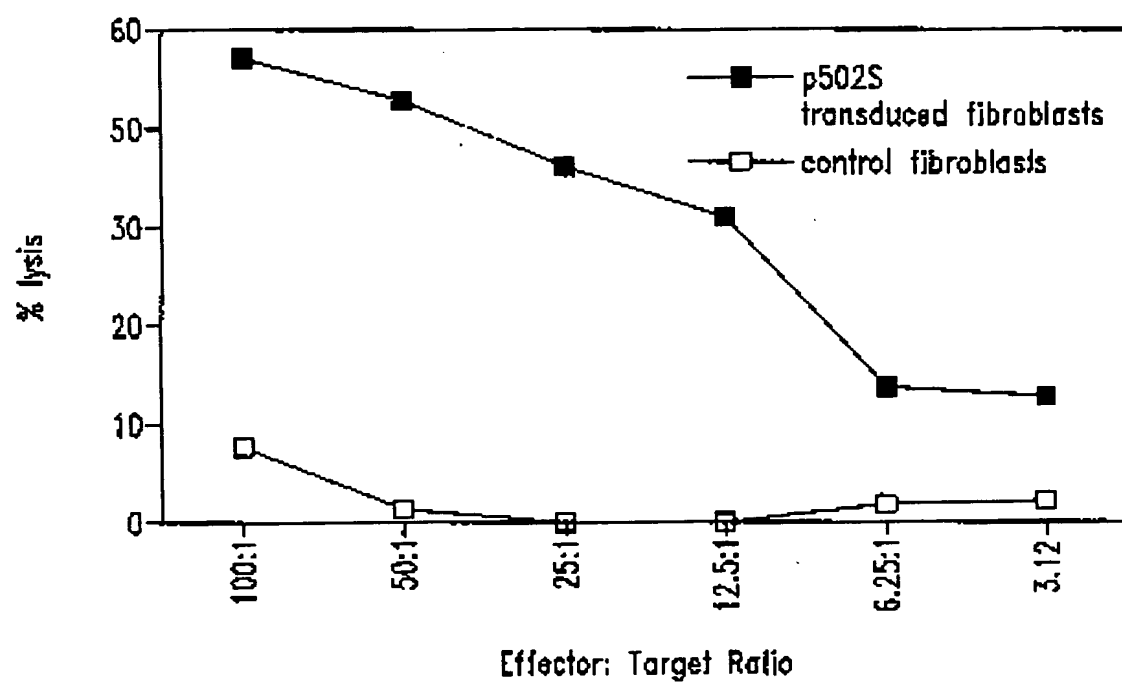
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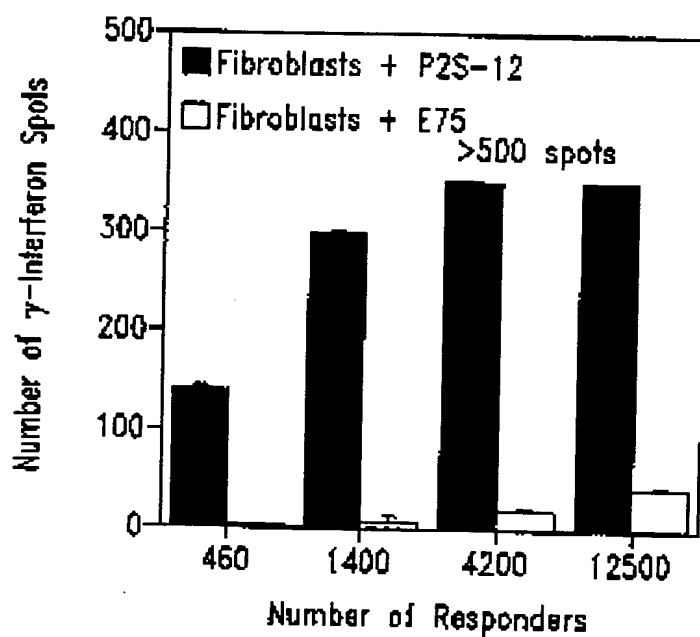
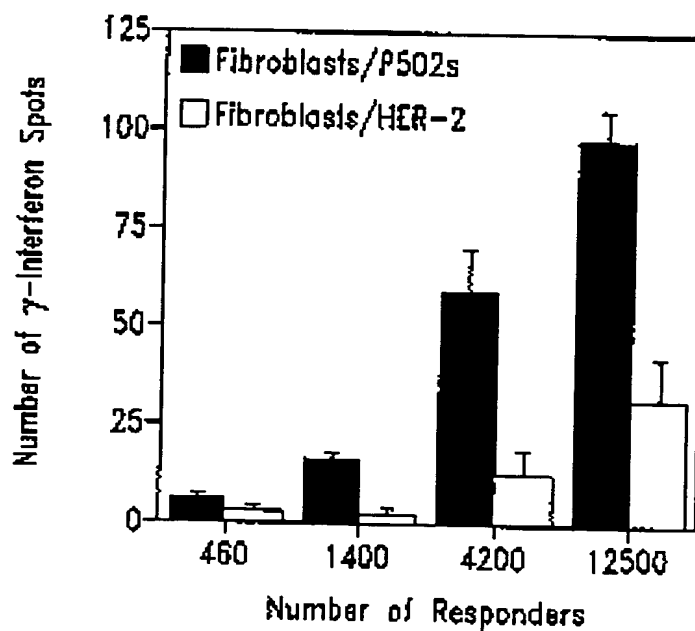
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1/5

*Fig. 1*

2/5

*Fig. 2A**Fig. 2B*

3/5

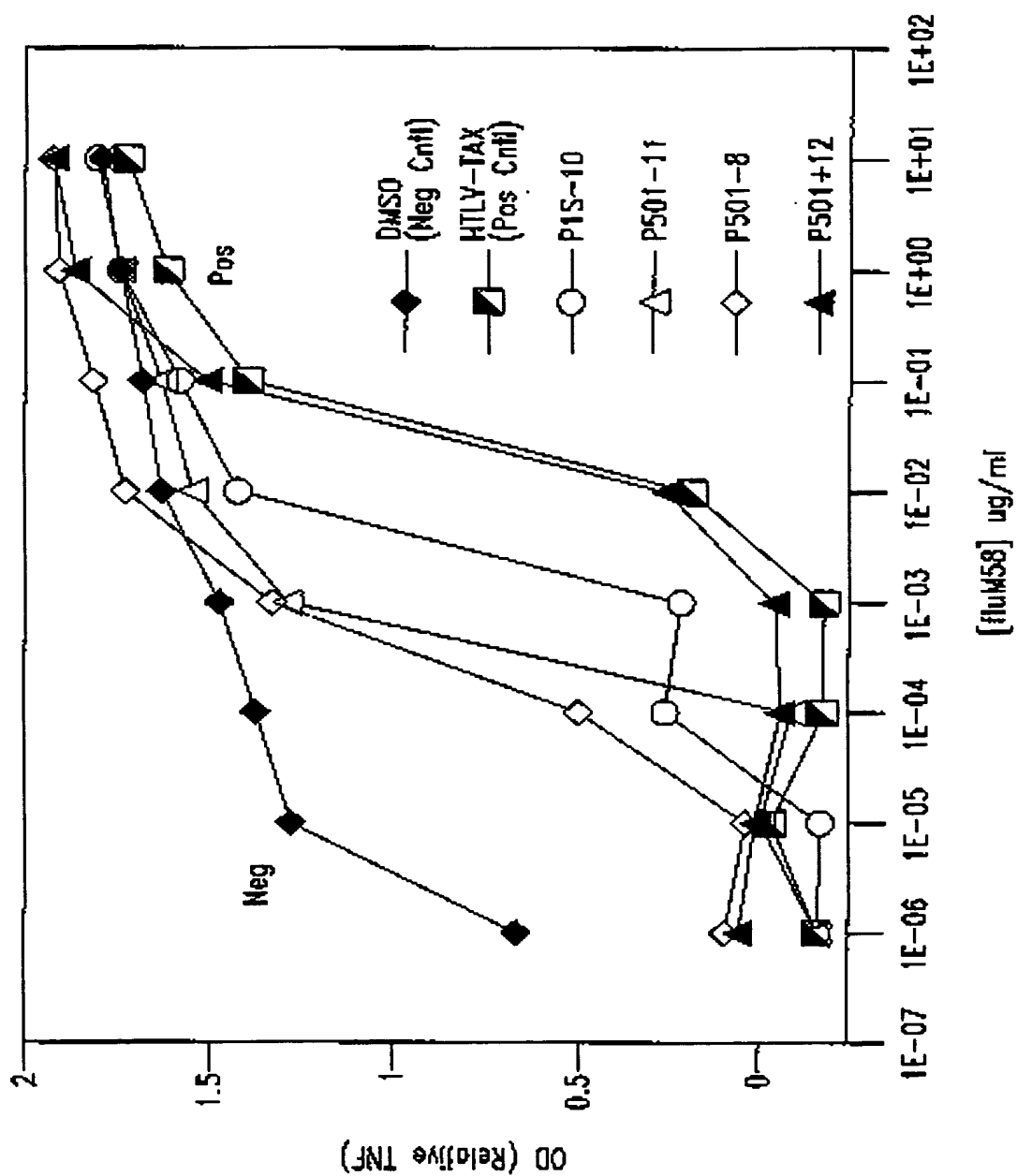
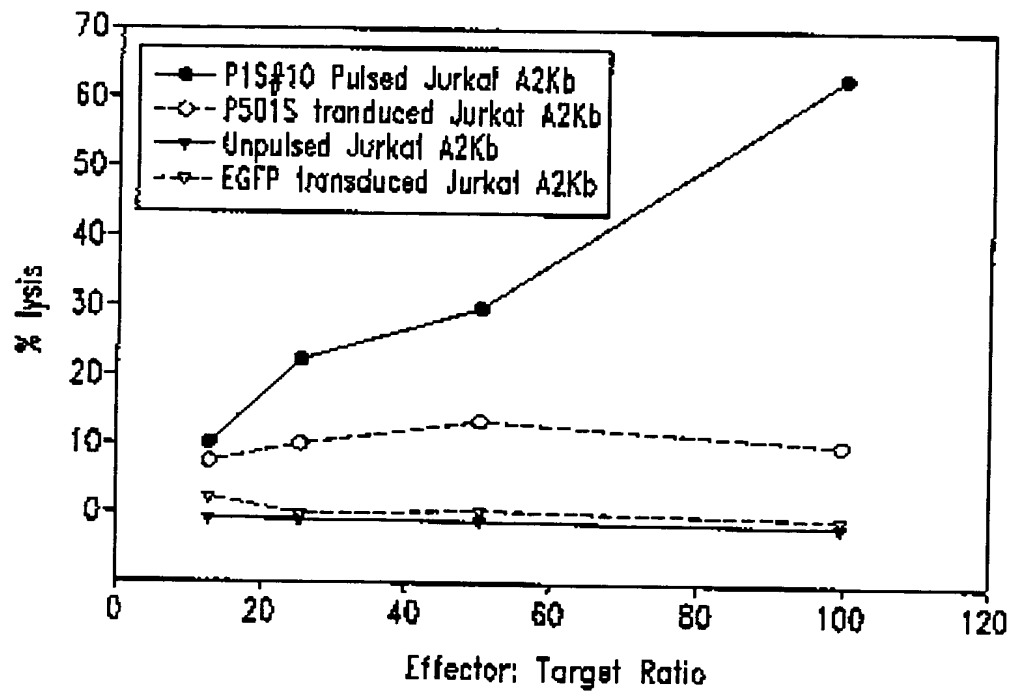
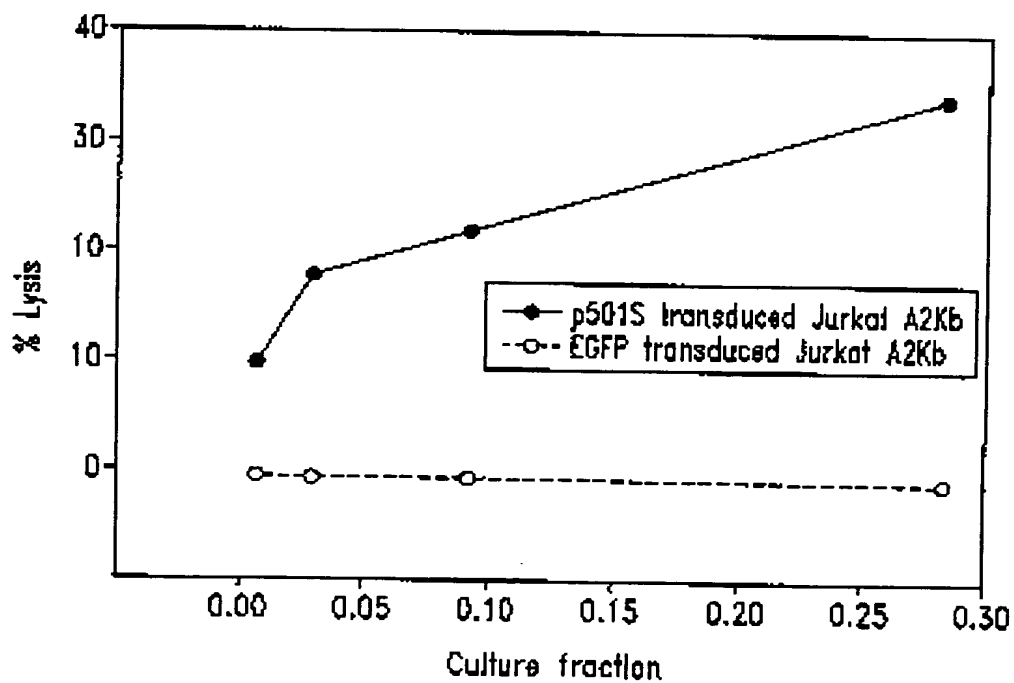


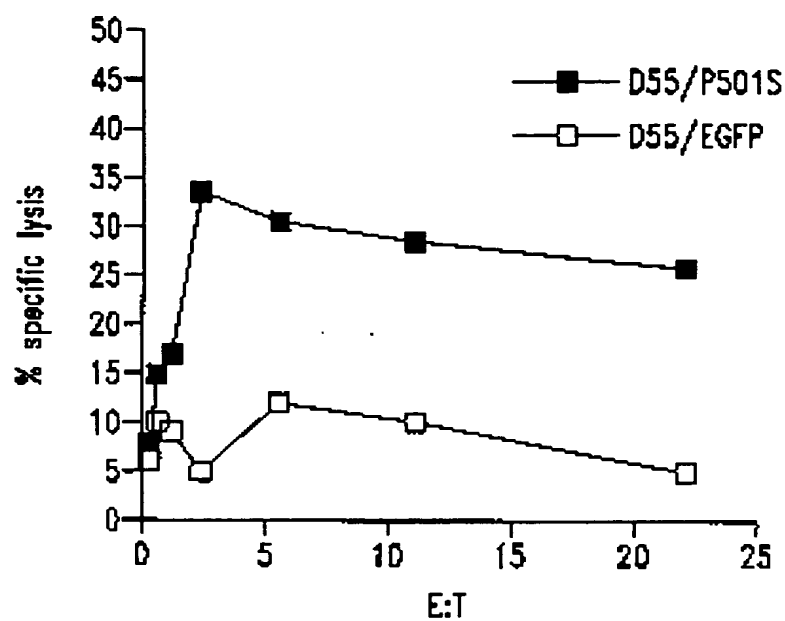
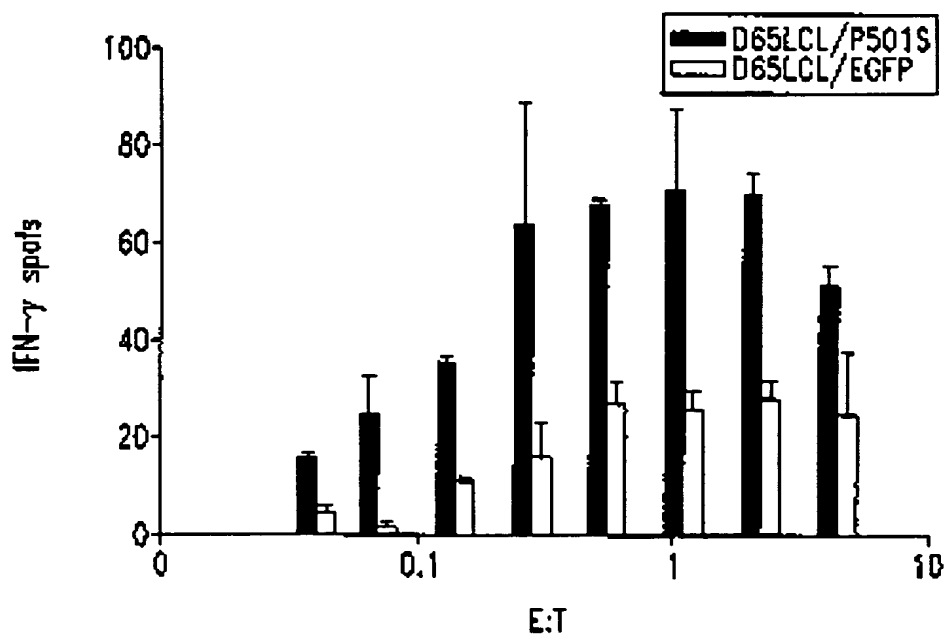
Fig. 3

4/5

*Fig. 4**Fig. 5*

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5/5

*Fig. 6**Fig. 7*

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<120> COMPOUNDS FOR IMMUNOTHERAPY AND DIAGNOSIS
OF PROSTATE CANCER AND METHODS FOR THEIR USE

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<210> 4

<211> 828

<212> DNA

<213> Homo sapien

<220>

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<223> n = A,T,C or G

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agagtggaac	gtgacacaa	gtggacactc	tctacagatc	atgaggata	agrtggagcc	300
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<212> DNA
<213> Homo sapien

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<212> DNA
<213> Homo sapien

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ctacatacgc cgggntcnc nctcccgctt tgtccctatc caggtncan caacaaattt 480
cncctantg caccnattcc caentttnc agnttccnc nccgngcttc cttntaaaag 540
ggttgancct cggaaaatnc cccaaagggg gggggcngg taccacaactn cccctnata 600
gctgaantcc ccatnaccnn gactcnaatg anccatccnt ttaannacn tctnaactt 660
gggaananc ctcgncntn ccccnctaa tcccnccctg cnangnncnt ccccnatcc 720
ncccnntng gcntntnann cnaaaaggc cnnnancaa tctcctnnc cccanttcg 780
ccanccctcg aatcggcen c 801

<210> 10
<211> 789
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{789}
<223> n = A,T,C or G

<400> 10
cagtcctatnt ggcagtggt gacagcttcc ctgtggctgc cggatgcaca tgcctgtccc 60
acagtggtgac cgtggtgaca gcttcagccg ccttcacccg gtacacctc tcagccctgc 120
agatcctgac ctacacactg gcctccctct accacgggga gaagcaggtg ttcctgccc 180
aataccgagg ggcactgga ggtgctagca gtgaggacag cctgatgacc agcttctg 240
caggccctaa gcctggagct ccttcccta atggacacgt ggggtgctga ggcagtyggc 300
tgctccacac tccaccgag ctctgagggg cctctgctg tcatgctctc gtacgtgtgg 360
tggtgggtga gccaccgan gccagggtgg tcccgggucg gggcatctgc ctggaacctg 420
ccatcctgga tagtgcttc tctgtccca tctggccca tccctgttta tgggtccat 480
tgtccagctc agrcagctg tcaatgccta tatgtgtct gcrgcaggcc tgggtctggt 540
cccatttact ttgtacaca ggtantattt gacaagaaag anttggcaca atactcagc 600
tcaaaaaatt ccagcaacat tgggggtgga aggcctgctt cactgggtcc aactcccg 660
tctgttca cccatggggc tgcgggttg gccgcaatt tctgttctg ccaaanctat 720
gtggctctct gctgcacct gttgctgggt gaagtgcnta cngcncanct nggggggtng 780
ggngtccc 799

<210> 11
 <211> 772
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{772}
 <223> n = A,T,C or G

<400> 11
 cccacccctac ccaaatatta gacaccaaca cagcaaaagct agcaatggat tcccctctctac 60
 ttgtttaadt aaataaattc antattttaa tgcctgtgbc tctgtgatgg caacagaagg 120
 accaacaggc cacatcctga taagaaggtaa yagggggggtg gatcagcaaa aaggacagtgc 180
 tctgggctga ygggacctgg ttcttgtgtg ttgccccctca ggaactcttc cctacaaata 240
 actttcatac gttaaaatcc catgggggag tgtttcatcc tagaaactcc catgcaagag 300
 ctacattaaa cgaagctgca ggttaagggg cttanagabg ggaacacagg tgactgagtt 360
 tattcagctc ccaaaaaccr ttctctaggc gtgtotcaur taggaggcta gctgttaacc 420
 ctgagcctgg gtaatccacc tgcagagtc cgcattcca gtgcatgga cccttctggc 480
 ctccctgtat aagtcragar tgaaccccc ttggaaggno tccagtragg cagccctana 540
 aactggggaa aaaaagaaaag gacgccccan cccccagctg tgcancbacg caactcaara 600
 gcacggggtg gcagcaaaa aaccacttta ctctggcaca aacnaaaact nggggggggc 660
 accccggcac ccnangggg gttaacagga anongggnaa cntgggaacc aattnaggca 720
 ggccctccac ccnaatntt gctgggaaat tttccctccc taaattntt tc 772

<210> 12
 <211> 751
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{751}
 <223> n = A,T,C or G

<400> 12
 gccccaattc cagctgcac accaccacag gtgactgcat tattytcggat gtratacaaa 60
 agrtgattga agcaacctc tactttttgg tctgtagcct ttgtcttggg gcaggattca 120
 ttggtgtgtg tggtagagtt gtcattgcaa cagaatgggg gaaaggcact gttctctttg 180
 aagtanggtg agtcctcaaa atccgtatag ttggtgaagc caccgcaact gagcccttc 240
 atggtggtgt tccacacttg agtgaagtc tcttgggaac cataatcttt ctltgatggc 300
 ggcactarna gcaacgtcag ggaagtgctc agccattgtg gtgtacacca aggcgaccac 360
 agcagctgcn acctcagcaa tgaagatgan gaggagagtg aagaagaacy tcnngggggc 420
 accttgcctc tcagctctlan caccatanca gccctgaaa accaananca aagaccarna 480
 cnccggctgc gatgaagaaa tnaacccncc ttgacaaact tgcattggcag tgggancac 540
 agtggcccca acaatcttca azaaggatgc cccatcnatt gaccccccac atgcccactg 600
 ccaacagggg ctgccccacn cncnnaacga tganccnatt gnacaagatc tncntggtct 660
 tnatnaacnt gaacctgcn tngtggctcc tgttcaggno cnnggcctga cttrtnaan 720
 aangaactcn gaagncacca cngganannc g 751

<210> 13
 <211> 729
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(729)
 <223> n = A,T,C or G

<400> 13
 gagccaggccg tccctctgcc tgercaactca gtggcaacac ccggggagctg ttttgtccctt 60
 tgtgganccct cagcagtncc ctctttcaga actcantgrr aaganccttg aacaggagcc 120
 accatgcaagt gcttcagctt cattaagacc atgatgatcc tcttcaattt gctcaltctt 180
 ctgtgtggtg cagccctgtt ggcagtgggc atctgggtgt caatcgatgg ggcactcctt 240
 ctgaagatct tggggccact gtctgccagt gccatgcagt ttgtcaacgt gggctacttc 300
 ctcatcgcaag ccggcgttgt ggtcttagut ctagggttcc tggggtgcta tgggtgctaag 360
 actgagagca agtgtgcccc cgtgacgttc ttcttcatcc tctctctcat cttnatlgct 420
 gaggttgcaa tgcctgtggtc gccttgggtgt acaccacaat ggctgagcac ttcttgargt 480
 tgcctggtact gcctgocato aaaaaagat tatgggttcc caggaaact tcaactcaagt 540
 gttggaacac caccatgaaa gggctcaagt gctgtggctt cnnccacta tccggatttt 600
 gaagantcac ctacttcana gaaaanagtg cctttcccco attctgtgtg caatlgacaa 660
 acgtccrcaa cacagccaat tgaaaacctg caccoccccc aaanggggtcc ccaaccanaa 720
 attnaaggg 729

<210> 14
 <211> 816
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(816)
 <223> n = A,T,C or G

<400> 14
 tgccttctct caaagttgtt ctgtttgcca taaczaccac cataggtaaa gcgggcgag 60
 tgttcagctga aggggttgta gtaccragcg gggatgctct ccttgacagag tcttgtgtct 120
 ggcaggtcca cgcagtgcc tctgtcactg gggaaatgga tgcgctggag ctctcaaaag 180
 ccactcgtgt attttcaca ggcagcctcg tccgacgcgt cggggcagtt ggggggtgtct 240
 tcacactcca ggaactgtc natgcagcag ccattgtgc agcggaaactg ggtgggtga 300
 cangtgcag agcaactgg atggcgccct tccatggnan yggccctgng ggaagtcgc 360
 tganccccc anctgcctct caaangcccc accttgaca ccccgacag ctagaatgga 420
 ctcttcttcc cgaaggttag ttnttcttgt tgcccaahcc anccccntaa acaaactctc 480
 granatctgc tccgnggggg tcntantacc ancggtggaa aagaaccccc ggcngrgaac 540
 caancttgtt tggatnccaa gcnataatct nctnttctgc ttggtggaca gcaccantna 600
 ctgttnanct ctagncontg gtctctntgg gttgnncttg aacctaatcn ccnntcaact 660
 gggacaaggt aantngcent ccttttaatt cccnankntn cccctgggt tggggctttt 720
 cncnctcta cccagaaaan nccgtgtter ccccaacta ggggcnaaa ccnnttnttc 780
 caccacccctn cccacccac gggttcngnt ggtcng 816

<210> 15
 <211> 783
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(783)
 <223> n = A,T,C or G

<400> 15

ccaaggcctg	ggcaggcata	naattgaagg	tacaacccca	ggaaacccctg	gtgctgaagg	60
atgtggaaag	cacagatttg	cgcctactgc	ggggtgacac	ggatgtcagg	atagagagga	120
aagacccaaa	ccaggtggaa	ctgtggygac	tcaagggaag	cacutacctg	ttccagctga	180
cagtgaclag	ctcagacvac	ccagaggaca	cggcvaacgt	cacagtcaat	gtgctgtcca	240
ccaagcagac	agaagactac	tgcctcgcac	craacaangt	gggtcgtctg	cggggccttt	300
tcccacgctg	gtactatgac	ccracggagc	agatctgcac	gagtttcgtt	tatggaggct	360
gcttgggcaa	caagaacaa	taccttcggg	aagaagagtg	cattctancc	tgtcnggggt	420
tgcagggtgg	gcctttgana	ngcancctcg	gggtctcangc	gactttcacc	caggggccct	480
ccatggaaaag	gcgccatcca	ntgtttctctg	gcacctgtca	gcctacccag	ttcggctgca	540
ngaattggctg	ctgcacacac	antttccctng	aattgtgaca	acacccccc	ntgcccccaa	600
ccctccraac	aaagcttccc	tgttnaanaa	tacnccantt	ggcttttnac	aaacnccggg	660
cncctccntt	ttcccccctn	acaaaagggg	ncnngenttt	gaactgccc	aaacnnggaa	720
ctnccnngg	aaaaantncc	ccccctgggt	ctnnaancc	cctccnnaa	anctncccc	780
ccc						783

<210> 1.6

<211> 801

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(801)

<223> n = A,T,C or G

<400> 16

gccccaatc	cagctgcac	acaccccacg	gtgactgcat	tagttcggat	gtcatacaaa	60
agctgattga	agcaacccctc	tactttttgg	tdgtgagcct	tttgcttgg	gcaggtttca	120
ttggctgtgt	tggtagcgtt	gtcattgcaa	cagaatgggg	gaagggcact	gttctctttg	180
aagtaggatg	agtccctcaa	atcgttatag	ttggtgaagc	caragcactt	gagccrtttc	240
atggtggtgt	tcacacttg	agtgaagctt	tcctgggaac	cataatcttt	cttgatggca	300
ggcactacca	gcaacgtcag	gaagtgcctca	gcctattgtgg	tgtacaccaa	ggcgaccaca	360
gcagctgcaa	cctcagcaat	gaagatgagg	aggaggatga	agaagaaagt	cncgagggca	420
cacttgctct	cgtctttagc	accatagcag	ccanagaac	caagagcaaa	gaccacaacg	480
ccngctgrga	atgaaagaaa	ntacccacgt	tgacaaactg	cattygccact	ggacgacagt	540
tggcccgaa	atcttcagaa	aagggatgac	ccatcgattg	aacacccana	tggccactgc	600
cnacagggct	gcncncncn	gaagaatga	gcattgaaag	aaggatentc	ntggtcttaa	660
tgaactgaaa	ccttgcatgg	tggccctgtt	tcagggtctt	tggcagtga	ttctganaaa	720
aaggaacngc	ntnagcccc	cuaangana	aaacaccccc	gggtgttgcc	ctgaattggc	780
ggccaaggan	ccctgccccn	g				801

<210> 17

<211> 740

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(740)

<223> n = A,T,C or G

<400> 17

ytgagagcca	ggcgtacctc	tgcctgcccc	ctcagtggca	acaccogggg	gctgttttgt	60
------------	------------	------------	------------	------------	------------	----

cctttgttga	gcctcagcag	ttccctcttt	cagaactcac	tyccaagagc	cctgaacagg	120
agccaccatg	cagtgcctca	gcttcattaa	gacctatgat	atctctctca	atttgtctcat	180
ctttctgtgt	gggtcagccc	tggtggcagt	gggcattctg	gtgtcaatcg	atggggcatc	240
ctttctgaag	atcttcgggc	cactgtctgc	cagtgcocat	cagtttgtca	acgtgggcta	300
ctccctcctc	gcagccggcg	ttgtggtctt	tgtctcttgt	ttcctgggct	gctatggtgc	360
taagacggag	agcaagtgtg	ccctcgtgac	gtctctcttc	atcctcctcc	tcactctcat	420
tgtctgaagt	gcagctgctg	tggtcgccct	gggtgtacacc	accaatggctg	aacctattct	480
gacgttgctg	gtantgctcg	cctcaanaaa	agcttatggg	ttcccaggaa	aaattcactc	540
aantctggaa	caccnccatg	aaaagggtct	caatttctgn	tggcttcccc	aactatacgc	600
gaattttgaa	agantcncct	tacttccaaa	aaaaaanant	tgccttctcc	ccctttctgc	660
tgcactgaaa	acntcccaan	acngccaatn	aaaacctgct	ctnnccaaaa	ggntcncaaa	720
caaaaaaant	nnaagggttn					740

<210> 18
 <211> 802
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (802)
 <223> n = A,T,C or G

<400> 18						
ccgctgggtg	cgctgggtcc	gngnagccac	gaagcacgct	agcatacaca	gortcaatca	60
caaggctctc	cagctgcgcg	acattacgca	gggcaagagc	ctccagcaac	actgcatatg	120
ggatcacact	tactttagca	gccagggtga	caactgagag	gtgtcgaagc	ttattctctc	180
gagcctctgt	tactggagga	agattccggg	cttcagctaa	gtagttagcg	tatgtcccat	240
aaacaaacac	tgtgagcagc	cggaaaggtag	aggcaagctc	actctcagcc	agctctctaa	300
cattggggcat	gtccagcagt	tctcraaaca	cgtagacacc	agnggcccuc	agcactctgat	360
ggatgaagtgt	ggccagcgct	gcccccttgg	cgcacttggc	taggagcaga	aattgtctct	420
ggttctgccc	tgtcaacttc	acttcgcgac	tcactcaatgc	actgagtgtg	ggggacttgg	480
gctcaggatg	tccagagacg	tggttccguc	ccctccttca	atgacaccgn	ccanncaacc	540
gtcggctccc	gncgantgng	ttcgtctgnc	ctgggtcagg	gtctgtctgg	cactacttgc	600
aanccttcgtc	nggccratgg	aattcacunc	acgggaactn	gtlangatcca	ctnnctctat	660
aaacggngcg	caccgcnhnt	ggaaetccac	tcttntctnc	ttactctgag	ggtaagggtc	720
accctttncc	ttaccttggc	ccaaacctn	contgtgtcg	anattngtna	tcnggncna	780
tnccancncn	atangaagcc	ng				802

<210> 19
 <211> 731
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (731)
 <223> n = A,T,C or G

<400> 19						
cnaagcttcc	aggtnacggg	ccgcnaencc	tgaccnagg	tancaanaag	cagncngcgg	60
gagcccaacc	tacagngng	ngtctttat	ngggaggggc	ggagcccat	cactggacnt	120
cntgaccccc	actccccc	nccantgca	gtgatgagtg	cagaactgaa	ggtnacgtgg	180
cagggaacca	gancgaahnc	tgtccnntc	caagtcggcn	nagggggcgg	ggctggccac	240
gencatccnt	cnagtgtctn	aaagcccnm	cctgtctact	tgttctggag	acngcnngga	300

catgcccagn	gttanataac	nggcngagag	tnantlttycc	tctcccttcc	ggctgcgrcn	360
ngngcntgct	tagnngarat	aacctgacta	cttaactgaa	ccnnngaato	tnccnccct	420
ccactaagct	cagaacaaaa	aacttcgaca	ccactcantt	gtcacttgnr	tgttcaagta	480
aagtgtaccc	catncccaat	gtntgctnga	ngctctgncc	tgcntlangt	trggtcctgy	540
gaagacctat	caattnaagc	tatgtttctg	actgcctctt	gtccctcgna	acaaacnacc	600
cnnnntcva	aggggggggc	ggcccccaat	ccccccaacc	ntnaattnan	tttancccn	660
ccccnggce	cggcctttta	cnancntcn	nnacngggna	aaaccnnngc	tttccccac	720
naatccncc	t					731

<210> 20

<211> 754

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(754)

<223> n = A,T,C or G

<400> 20

tttttttttt	tttttttttt	taaaaacccc	ctccattnaa	tynaaaccttc	cgaattgtc	60
caaccccctc	ntccaaatun	ccttttccgg	gnggggggtc	caaaccctaan	ctanntttgg	120
annttaaat	aatntctnt	tggngggnna	anccnaatgt	nangaaagtt	naaccantta	180
tnanttnaa	tnccctggaaa	cngtngntt	ccaaaaatnt	ttaaccctta	antccctccg	240
aaatngctna	nygaazaccc	aatctctctt	aaggttgtt	gaaggntnaa	tnaaaanccc	300
nnccaatgt	ttttingccac	gcctgaatta	attggnttc	gntgttttcc	nttaaaanaa	360
ggnaacccc	ggttantnaa	tcccccnnc	cccaattata	ccgantttt	ttngaattgg	420
gancccnccg	gaattaacgg	ggnnmntcc	tnctgggggg	cnngnccccc	ccccntccgg	480
ggttnggggc	aggnonnaat	tgtttaaggg	tccgaaaaat	ccctccnaga	aaaaaanctc	540
ccaggttgag	nttnggggtt	nccccccccc	canggccctt	ctcguaagtt	tgggggttgg	600
ggggcctggg	attttnttcc	ccctnttccc	tccccccccc	ccnggganag	aggttngngt	660
tttgnctcnc	ggcccnccn	aaganccttn	ccganttnan	ctaaatccnt	gcctnggcga	720
agtcnnttgn	agggntaaan	ggccccctnn	cggg			754

<210> 21

<211> 755

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(755)

<223> n = A,T,C or G

<400> 21

atcancccat	gaccccnacc	nngggaccnc	tcancgggnc	nnncnaernc	cgggccnatca	60
nngtnaggncc	actncnnttn	nacacnccc	ccccnactac	gcccunhanc	cnacgcnccta	120
nnrcanatncc	actganngcg	cgangtngan	ngagaaanct	nataccanag	ncaccanacn	180
ccagctgtcc	nanaangcct	nnnatacngg	nnnatcccat	ntgnancctc	cnaggtattn	240
nnrcnccan	gattttccctn	anccgattac	ccntnccccc	tanccctctc	cccccaacna	300
cgaaggcnct	ggncnnaagg	nngcgncc	ccgctagntc	ccnncaagt	cnchcncccta	360
aactcanccn	nattacnccg	ttcntgagta	tcactccccc	aatctccccc	tactcaactc	420
aaaaanctcn	gatacaaat	aatncaagcc	tgnttatnac	actntgactg	ggctctctatt	480
ttagnggtcc	ntnaancntc	ctaatacttc	cagctcncct	tcncccatct	ccnaanggct	540
ctttcngaca	gcanttttbg	gttcccnntt	gggttcttan	ngaattgccc	ttcntngaac	600

gggtctctct	tttcccttcgg	ttanccctgg	ttcnnccggg	cagttattat	ttcccttttt	660
aaattctctc	ctcttctttt	tggccttctc	aaaccccgcc	cttgaaaaag	gcctctgggl	720
aaaaggttgt	tttganaaaa	tttttgtttt	gttcc			755

<210> 22

<211> 849

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(849)

<223> n = A,T,C or G

<400> 22

tttttttttt	tttttngtg	tngtcgtgca	ggtagagggc	tactacaant	gtgaanacgt	60
acgctnggan	taangcgac	cgaattctag	gannccct	aaatcanac	tgtgaagatn	120
atcctganna	cggaanggtc	accggnggal	ntgtctaggg	tgnccctcc	canncccttn	180
cataacteng	nggcccctgc	caccaccttc	ggcgggccch	ngnccgggcc	cggtctattn	240
gnnttaaccc	cactnnngca	ccggtttccn	ncctccnccg	accnnggcga	tccggggtnc	300
tctgtcttcc	cctgnagncn	anaaaatggg	ccnccggccc	ctttaccctt	nnacaaagcca	360
cngcctctca	ncnccngccc	ccctccant	nngggggact	gcnanngct	cgttctctng	420
mauccccnn	gggtccctcg	gttgtctgnt	cnaccgnang	ccanggatcc	cnaagggaagg	480
cggttttttg	gcccctaccc	ctcgtctncc	nnccaccttc	cgcacnanga	ncgctctccg	540
cnccnccnng	cctccctctg	caacaccccg	ctcctctngt	ncggnncccc	ccccacccgc	600
ncctctcncc	ngnccnccn	ctccnccncc	gtctcanncc	ccaccccgcc	ccgctcagcc	660
ntcancaccc	cgngnccnng	nagcnccttc	gcncccgccn	gcgcnccctt	cgcctcnngaa	720
ctnccctcng	ccantnccgc	tccanccnna	cnaaacggcc	ctgcgcggcc	cgnagcgncc	780
ncctccnccg	gtcctcccg	ctccnccncc	angnatccn	cgaggacaca	nnaccccgcc	840
nnccnccgg						849

<210> 23

<211> 872

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(872)

<223> n = A,T,C or G

<400> 23

ggcnaaacta	tacttctctc	gnactcgtgc	gcctcctctc	tcttttcttc	cgcacccatg	60
tctgaenanc	cgaattnggc	ngatctctnn	aagntcgcnc	agtccaaact	ganbaacaca	120
cacacnccan	aganaaatcc	ncctgccttcc	anagtanaen	attgcaacng	agaaccangc	180
nggcgaatcg	tactnagggc	tgccgcggcc	atnctglcnc	gtttattctn	ccagctctnc	240
ctnccncccc	tactctcttc	nagctctctn	acccctngtn	cgnauccccc	naggtcggga	300
tccgggtctn	ncctcccgng	cnnccctctc	ccctctccat	nacganccnc	ccgcaccacc	360
naungcncg	ncnccnccn	cttcgcncnc	ctgtctctct	ccctctngcc	ctggcncngn	420
accgcattga	ccctcccgng	ctnccnccaa	ncgnanacgt	ccgggttggn	annanngctg	480
tgggnnngcg	tctgcncgcc	gttccctccn	ccncccttcc	ccatctctct	tacnngggtct	540
ccnccgcttc	tcnccnccnc	cttggggacc	tntccctngc	ccctcttnac	tccnccctct	600
cgnccgtgnc	cgncccccac	ntcattctca	nacgntcttc	acaaannccn	gggtctnctcc	660
cnccnccnng	gtcancnccg	ggaaaggngg	ggnnccnctg	nttgaaggtg	nggnngngtc	720
cgaanctctc	tccnccctca	ctctacccct	cgggcggnct	ctcngctncc	aaattancaa	780

ntctcccccgc ngngcncntc ccaguctcnc cccccccnct ctctycantg tntctctyctc 840
tnaccnnlacc gantnttcgn cncctctctt cc 872

<210> 24
<211> 815
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (815)
<223> n = A,T,C or G

<400> 24
gcattgcagc ttgagtattc tatagngtca cctaaatanc ttggcctaata catggctenta 60
nctgnccttc tgtgtcaaat gtatacnaaa tcnatctgaa tctnatnctga ccaganngtc 120
tcntncattt gtaacaantg tnttctccat cctgtcngan ccancttccca tnncttncgn 180
cgcattcncn gcnctantctn taatngggaa ntctnnutnnn ncaccnncat cctctctncc 240
gcnccctgac tggagagat ggatnatttc tntnttgacc nacatgttca tcttggattc 300
aanancctcc cgcngncctc cggttngnng cnagcchntc ccaagacctc ctgtggaggc 360
ccctctgctc agannctca aacntggga acccgcnnc anglnnagc ngnnncan 420
gatercgtcc aggtctnacc ctccctctnc agcgcctcc tngtgccct anagngnagc 480
gtgtcchanc cuctcaacat ganacgcgcc agnccancgc caatlngga caatgtcngc 540
gaacccctca gggggantnc tncaanccr caggattgtc cncncangaa atcccnccnc 600
ccnccctc cctnctttgg gacngtgacc aantcccgga gtnccagtc ggcncngctc 660
cccccctggc nccntgggg gggctgaanc cngnntcanc cngmccaggc ntgnnaggc 720
accgncctn ggnccgannng ancnctcnga agngcncnt cgtataacc cccctcncca 780
nccnncngnt agntccccc cngggctncyy aangc 815

<210> 25
<211> 775
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (775)
<223> n = A,T,C or G

<400> 25
ccgagatgtc tcgctccgct gccttagctg tgctcgcgct actctctctt tclggcctgg 60
aggctatcca ycgtaactca agattcagg tttactcacg tcatccagca gagaatggaa 120
agtc aaattt cctgcaattg tatgtgtctg ggtctcatcc atccgacatt gaenttgact 180
bactgaayaa tgganagaga attgaabaa tggagcattc agacttgtct ttcagcaagg 240
actggctctt ctatctctg tactacactg aaltccccc cactgaabaa gatgagtatg 300
cctgccgtgt gaaccatgtg actttgtcac agcccaagat agttaagtgg gatccagaca 360
tgtacgcagc cncatggaa gtttgaaagt gdcgcatttg gattgagatg attccaaatt 420
ctgcttgcct gcttttcaat antgatatgc ntatccaccc taccctttat gndcccaaat 480
lctaggggtt acatnangt tcnctnggga catgatctc ctttataant cncncttct 540
aattgcccgt cncctngttn ngaatgttcc cncnccacgc gttggctccc ccaggctcnc 600
tcttacggaa gggcctgggc cnccttncaa ggttggggga accnaaaatt tcncttntgc 660
cncnccncca cmtcttngg ncnctanttt ggaacccctc cnatccctct tggcctcna 720
nctttncta anaaacttn aaanogtngc naanntttn acttccccc ttcac 775

<210> 26

<211> 820
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(820)
 <223> n = A,T,C or G

<400> 26
 anattantac agtgtaatct. tttcccaag agtggtanag ggaacggggc ctagaggcat 60
 cccanagata nettatanca acagtgcctt gaccaaagag tgcctgggcac atttccctga 120
 gaaaagggtg cgggccccat cactccctcc ctcccatagc catcccagag gggtagtag 180
 ccatcagcc ctcgggtggg gggagtcang gaaacaaan aaccacagag anacagaca 240
 ntgatgacca tgggggggg agagccctct cctgnaccg gggtagcana nganagccta 300
 nctgaggggt cacaatataa argttaacga cmagatnan caoctgcctc aagtgcaccc 360
 ttcctacctg acnaccagng accnnnaact gcngcctggg gacagcctc ggancagcta 420
 acnnagccct caoctgcctc cccatggccg tncgntccu tggctcctgnc aaggggaagct 480
 cctgttggg attnaggga naccaaaggg nccocctcct ccanctgtga aggaaaaann 540
 gatggaattt tncctctccg gccnntccc tcttcttta caugccctc nntactctc 600
 tccctctntt nteetgnenc acttttnacc cennnatttc cctlnaattga tcygannctn 660
 ganattccac tnnccctnc cntenatong naanacnaaa nactntctna ccnnggggat 720
 gggnnccctg ntcctctct ctttttctct accnccnntt ctttgcctct ccttngatca
 780tccaaacntc gntggcctn cccccccnnn tcttttccc
 820

<210> 27
 <211> 818
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(818)
 <223> n = A,T,C or G

<400> 27
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 tgtttctct cagagcccca ggcaggggtg attcagccct gcccaacctg attctgatga 120
 ctgaggatgc tgtgacggac ccaaggggga aatagggtcc cagggtccag ggaggggggc 180
 ctgctgagca cttccgccc tcaacctgct cagccctgct catgagctct gggtgggtc 240
 tccgacctca gggttctgct ctccangca nqccanccag tggcctggg ccaactggc 300
 ttctctctgc cccntccctg gotctganc tctgtcttcc tgtcctgtgc angcnccttg 360
 gatctcagtt tccctcctc anngaactct gttctgann tcttcantta actntgantt 420
 tatnaccnan tggmctgtnc tgtcnnactt taatgggccc gacccgctaa tccctccctc 480
 nctcccttcc anttccnnna accnqcttnc cntctctcc ccttccccc cccgggaanc 540
 ctcccttggc cttnaccang gccnnnacc cccntnnctn ggggggcnng glnntnnc 600
 ctgntnncc cncctcnnnt tncctgttcc cnnccnccn ngcannntc nngtcccn 660
 tnnctcttcc ngntcgnaa ngntcnnctn tnnnnngncc ngntnnctn tccctctcnc 720
 cnnctgnag cnnctnnnc ncnngnccc nnnccnnnnn nggnntnnn tntcncngc 780
 cccnnccccc ngnatcagg cctccnntct cgggcnc 818

<210> 28
 <211> 731
 <212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(731)

<223> n = A,T,C or G

<400> 28

aggaaggggcg	gagggatatt	gtanggggatt	gagggatagg	agnataaaggg	gggagggtgtg	60
tcccaacatg	anggtgnngt	tctcttttga	angagggttg	ngtttttann	ccnggtgggt	120
gattnaaccc	catgtgatgg	agnnaaagg	tttnagggat	ttttcggctc	ttatcagfat	180
ntanattcct	gtnaatcggg	aatnatntt	tannnnggaa	aatnttgctc	ccatccgnaa	240
atttctcccg	ggtagtgcat	nttnggggg	cngccangtt	tcccaggctg	ctanaatngt	300
actaaagntt	naagtgggan	tncaaatgaa	aacctnnuc	agagnatccn	taccugactg	360
tnnnttncct	tggccctntg	actctgcnng	agcccaatar	ccnngngnat	gtcnccmgn	420
unngcgunc	tgaannnnoc	tcgnggctnn	gancatcang	gggtttcgca	tcaaaagcnn	480
cgtttncat	naaggcactt	tngccctcct	caaccnctng	ccctcnnocn	tttngccgtc	540
nggttctnct	acgtntntng	cnccctnnntn	ganaltttnc	ccgcttnggg	naandctcct	600
gnaatgggta	gggncttntc	ttttnacenn	gnggtntact	aatcnnctnc	acgentnctt	660
tctcnacccc	cccccctttt	caatccanc	ggcnaalggy	gtctcccn	cgangggggg	720
nnnccannnc	c					731

<210> 29

<211> R22

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(822)

<223> n = A,T,C or G

<400> 29

actagtcacg	tgtgggtggaa	ttccattgtg	ttgyygnenc	ttctatgant	entnttagat	60
cgctcanacc	tccancctc	ccnancngc	ctataangaa	nenuataga	netgtncnnt	120
atntntaonc	tcatannct	cnnnaccac	tccctcttaa	ccctactgt	gcttatngcn	180
tnoctantct	ntggcgcctn	cnanceccn	gtgggcnac	cnennngnatt	ctcnatctcc	240
tccccatntn	gcctananta	ngtncatacc	ctataccctac	nccaatgcta	nnnctaanen	300
tccatniantt	annntaaata	ccactgaent	ngactttcnc	atnanctcct	aatttgaatc	360
taetetgact	cccacngcct	annnattagc	anentccccc	nacnatntct	caaccaaate	420
ntcaacraacc	latctantgt	ttcnccaaac	nttncctccg	atccccnnac	aaccccccctc	480
ccaaataccc	nccacctgac	ncctaaccen	cccatcccg	gcaagccnnc	gynccatttan	540
ccactggagt	ccanctngga	naaaaaaaac	ccnaacctctc	tanccnnnat	ctcccclaana	600
aatnctcctn	naatttactn	ncantnccat	caanccccacn	tgaacnnnaa	ccccctgtttt	660
tanatccctt	ctttcgaaaa	ccnaccttt	annnccccaac	ctttnggggc	cccccnctnc	720
ccnaatgaag	gncncccaat	cnangaaacg	nccttgaaaa	anccnaggcna	anannntccg	780
canatcttat	cccttanttn	ggggncctt	ncccnngggc	cc		822

<210> 30

<211> 787

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(787)

<223> n = A,T,C or G

<400> 30

cgcccgcccg	ctctggcaca	tgccttcctga	atggcatcaa	aagtgaigga	ctgcccatcg	60
ctggagagga	ccttctctcc	tactgtcatt	atggagccct	gcagactgag	ggctccctt	120
gtctgcagga	tttgatgtct	ggaatcgttg	agtgtggctt	ggagctcctc	atctacatna	180
gctggagggc	ctggaggggc	tctctcgcca	gcctcccccct	tctctccacg	ctctccangg	240
acacccagggg	ctccaggcag	ccatttattc	ccagnangac	atgggtgttt	tcacagggga	300
cccatggggc	ctgnaaggcc	agggtctcct	ctgacacccat	ctctcccgct	ctgcttgcca	360
ggcctgggga	tcactantt	ctanaacggg	cgccaccncg	gtgggagctc	cagcttttgt	420
tcccttttct	gnaaggtta	tgcncgcttg	gcgtacatcat	nggtcnaaac	tncttctgt	480
gtgaatttgt	ttntccctc	ncnattccnc	nonacatacn	aaccaggaa	cataaagtgt	540
tgaagcctgg	gggtngcctn	ongaatnaac	tnaacctcaat	taattgctt	ggctcatggc	600
ccgttttccn	ttcnggaaa	ctgtctctcc	ctgcnttntt	gaatcggcca	ccccccggg	660
aaaagcgggt	tgcnttttng	ggggntccct	cnccttcccc	cctcncctaa	ccctnccgt	720
cggtcgttnc	nggtngcggg	gaaaggggat	nnctccccc	naagggggng	agnngntat	780
ccccaaa						787

<210> 31

<211> 799

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(799)

<223> n = A,T,C or G

<400> 31

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catgtaccag	ggctattaga	agcaagaggg	ggggagggag	ggcagagngc	cctgttgagc	120
aacaaaggac	tctgtcagcc	ttctctgtct	gtctcttggc	gcaggtccat	ggggaggcct	180
cccgacaggt	gggggcccac	agtcragggg	tggagggact	acanggggtg	ggagtgggtg	240
gtggctggtn	cnaatggcct	gndacanate	cctacgattc	ltgacacctg	gattt.cacca	300
ggggaccttc	tyttctccca	nggnaacttc	ntnnatctcn	aaagaacaca	actgtttctt	360
cngcanttct	ggctgttcat	ggaaagccca	gggtctcnnat	ctnggttggg	acttgggtac	420
tatgggtctg	ggccacctct	ccctcnaaa	agtaattca	ccccccccc	ccntctnttg	480
cctgggccc	taantaccga	cacgggaact	canttantta	ttcatcttng	gntgggcttg	540
nlhatcncun	cctgaangcg	ccaagtcgaa	agggccacgc	gtncctcctc	cccatagnan	600
nttttntnt	canttaatgc	ccccccnggc	aacnatccaa	tcccccccn	tgggggcccc	660
agcccaangc	ccccgctcgc	ggnnncnngn	cncgnantcc	ccaggtcttc	ccantcngnc	720
cannngcnc	cccgccagca	gaacanaagg	ntngagccnc	cgcannnnnn	nggtcncnac	780
ctcgccccc	ccnnccngng					799

<210> 32

<211> 789

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(789)

<223> n = A,T,C or G

<400> 32

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tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	180
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	240
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	300
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	360
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	420
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tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	780
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<210> 33

<211> 793

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (793)

<223> n = A, T, C or G

<400> 33

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aattcatggc	tgttggagca	atanaacccc	agttctacga	gclgctgatu	aaaggacttg	120
gactaaagtc	tcatgaactt	cccaatcaga	tgagcatgga	tgattggcca	gaaatgaana	180
agaaagtttg	agatgtatct	gnaaagaaga	ogaaggcaga	gtggkgtcaa	atctttgacg	240
gcacagatgc	ctgltatgac	coggttctga	cttttgagga	ggttggttat	catgatcaca	300
acaaagaaag	gggctcgttt	atnaccantg	aggagcagga	ngtgagcccc	cgcctgacac	360
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ggncgcccac	gggtggagc	tccagctttt	gttcccttta	gtgagggltc	attgcgcgt	480
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acaaatccag	atccggaagc	atnaaatctt	aaagcctggg	ggtngcctaa	tgantgaact	600
nactcanatt	aattggcttt	gcgtccactg	cccgtcttcc	agtcaggaaa	acctgtcctt	660
gocagctgac	nttaatgaat	cnggccaccc	cccgaggaaa	aggcngcttg	cttnttgggg	720
cgcncttccc	gcctttctgc	ttcttgaant	ctttcccccc	ggtctttcgg	cttgcggcna	780
acggtatena	cct					793

<210> 34

<211> 756

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (756)

<223> n = A, T, C or G

<400> 34

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ancaagtgcg	gggaanagct	gggtcgactc	aaagtagttc	ttcggaggtc	taacttcttg	120

ccaaccacag	ggaccaagct	gacnaaacag	caagctaatc	tggcccgtag	catactggag	180
atcgggggccc	atgaggcat	catacgcaan	gacatcccc	ccttcgagcg	ctacatggcc	240
cagctcaaat	gctactactt	tgattacaan	ggcgagctcc	cagagtccgc	ctatatgrac	300
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acgganttgg	ancggctgcr	tgcacaangc	calacacacc	aatgtctaca	tunaccacca	420
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catccccgc	cgagagctac	accttcttca	tbgacatcct	gtcgcacact	atcagggtatg	540
aaaatcgng	ggttgcttca	gaaaggctnc	aanaaanatc	ttctcctga	aggccccggg	600
atnncctagt	ntagaatcg	gcccgcctac	gggtgganc	ctccaacctt	tggttccct	660
ttactgaggg	tttattggcg	cccttggcgt	tatcatggtc	acnccngttn	cctgtgttga	720
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<210> 35

<211> 834

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (834)

<223> n = A,T,C or G

<400> 35

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tagtccagca	cncctcttgg	caaaaacacn	caggatntga	gtcttgattt	caactccaat	180
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aaantccanc	angtintcct	tggtgacctc	cccttcaaa	ttgttcgggc	cttcatcaaa	300
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acntnctggg	ccgggttcaa	antccctccn	cttgcgggcca	ttctggattt		720
ncnaacttt	ttctctcccc	cncccnccgg	ngtttggntt	ttctatnggg	ccccactct	780
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<210> 36

<211> 814

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (814)

<223> n = A,T,C or G

<400> 36

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naacggcaac	tcaggccatt	cctaccaaag	gaagaaaggc	tggctctctc	accccttgta	180
ggaaaggcct	gccttgtaag	acaccacaat	ncggctgaat	ctnaagtctt	gtgttttaact	240
aatggssaaa	aaataataac	aanagggttt	gttctctctg	ctgcccacgc	cagcctggca	300
ctaaaacanc	ccaggctca	cttctgcttg	ganaaatatt	ctttgctctt	ttggacata	360

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ggcttgatgg tatcaactgac acntttccac ccagctgggc ncccttccc catntttgtc 420
antgancttg agggcctgaa ncttagtctc caaaggctct ngccracaag acgggccacc 480
aggggagtg nttnccagtg gatctgucuu anantaccn tatcatcnnt gaataaaag 540
gcccctgaa cganatgcttc cancancttc taagaccctt aatcctngaa ccatggtgac 600
cttccggtct gatccnaaag gaatyttctt gggctccant cctt.cctttg ttctttacgt 660
tgtnttgga ccttgcttng atnacccaan tganatcccc ngaaagcacc tacccttggc 720
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<210> 37

<211> 760

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{760}

<223> n = A,T,C or G

<400> 37

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gtgtcttgca ggtccacgra atgccccttg tcatctggga aatggatgag ctggagctcg 180
tcnaancac tctgtgtatt ttccacngca gctccctcag aagcttccgg gcagttgggg 240
gtgtcgtcac actccactaa actgtcgatn caccagccca ttgttgcagg ggaactgggt 300
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ttgcacaact tgttccgttg ggtcatnnn taccanggtt ggggaanana acccggtcng 540
ganccnctt gttagaatgc naaggnaata atctctctgt ctgtcttggg tgggaanagra 600
caattgaact gttaactttg ggcgnggttc ccttnggggt gtctgaaact aatcacctgc 660
actggaanaa ggtangtgcc tctcttgaat tcccaaanct cccctngntc tgggtntttt 720
ctctctncc ctaaaaatcg tnttccccc ccttangggg 760

```

<210> 38

<211> 724

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{724}

<223> n = A,T,C or G

<400> 38

```

tttttttttt tttttttttt tttttttttt tttttaaaa ccccttccat tgaatgaaa 60
cttccnaaat tgtccaaacc cctcnnccaa atnucattt cggggggggg gtcccaaac 120
caatttaatt ttggantttt aattaaatnt tnattngggg aanaancraa atgtnaaqua 180
aatttaacc attatnaact taactnctn gaaacccttg gnttccaaa attttaanc 240
cttaaatccc tcugaaattg ntaanggaaa accaaatton cctaaggctn tttggaaggt 300
ngatttaaac ccccttnant tnttttnacc cngnctnaa ncttttngnt tccggtgttt 360
tcc(nltaaa) cctnggtaac tcccgntaat gaarunccct aaccaattt aacugaat 420
tttttgaatt ggaactccc ngygaattna ccggggtttt tcccttttgg gggccatncc 480
cccttttttg ggggttgggg ntagggtgaa ttttttnang ncccaaaaa ncccccana 540
aaaaaactcc caagntttaa ttngaatntc ccccttccca ggccttttgg gaagggggg 600

```

```

tttttggggg cgggggantt ctttccccnn ttncncncnc ccccconggt aaanggttat    660
ngmntttggg ttttggggcc ctttannaggac ctcccggaatn gaaattaaal cccccggncg    720
ggcg                                           724

```

```

<210> 39
<211> 751
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (751)
<223> n = A,T,C or G

```

```

<400> 39
tttttttttt tttttttttg ctcaatttta atttttatct tgattttttt taatgctgca    60
caacacacata tttatttcat ttgtttcttt tatttcattt tatttgtttg ctgctgctgt    120
tttatattat ttactgaaa gtagggggga aottttgttg ctttttttcc tttttctgta    180
ggcggcctta agctttctaa atttggaaac tctaaggcaag ctgaanggaa aaggggggtt    240
cgcaaatca ctcgggggaa nggaagggtt gotttgttaa tcatgacctc tgytgggtga    300
tcaactgctt gtacaattac ntctcacttt taattaatlg tgcnaangc tttaatlone    360
cttgggggtt cctcccccnn aaccaacccn ctgacaaaaa gtgcngccc ccaaatnatg    420
tcccggnnt ctttgaaaac caungengaa ngttctcatt ntcccccnc caggtnaaaa    480
tgaagggtta ceatntttta cncacactcc acntggcnnn gcctgaatcc tcnaaaaan    540
cctcaannc aattncbnn ccccggtcnc gentongter cncgggggt ccgggaantn    600
caccocnga annnntnnc naacnaaatt cngaaatat tccnntcnc tcaattcccc    660
cnnagactnt cctcnnan cncaatttt tttnttcac gaacncgnnc cunnaaatgn    720
nnnnncctc cnetngteen naatcncan c                                           751

```

```

<210> 40
<211> 753
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (753)
<223> n = A,T,C or G

```

```

<400> 40
gtggtatttt ctgtaagatc aggtgttctt cctctgtagg tttagaggaa acacccctcat    60
agatgaaaaac ccccccagaa cagcagcact gcaactgccr agcagccggg gtaggggggg    120
cgccctatgc acagctgggc ccttgagaca gcagggttcc gatgtcaggc tcyatgtcaa    180
tggtctggaa gggcggtctg taactgcgta ggggcacacc gtcagggtcc accagggaact    240
tctcaaaagt ccaggcaacn tggltggac acaccggaga ccgggtgatn agcttggggg    300
cggtcataan cgggttggcg tggctgctgg gggctggcag ggctcccgcc aggaaggcna    360
ataaaagggtg cggcccgga cggttcancr cgcactcttc naunaccatg angltgggct    420
cnaacccacc accannccgg atttcttga nggaattccc aatctcttc gntcttgggc    480
ttctactgat gccctancct gttgcrcngn atgccaancc nccccancc cgggggtccc    540
aancaacccn cttctcnc tcatctgggt tnttntccnn ggacnltgg tctctcaag    600
gyancccata tctcnaccan tactcaccnt nccccccnt gnnacccanc cttctanngn    660
ttccncccg nctctgggc cntcaaanan gttncacne cctgggtctg ccttcccccc    720
tacctatct gnacccnncn tttgtctcan tnt                                           753

```

```

<210> 41

```

<211> 341
 <212> DNA
 <213> Homo sapien

<400> 41
 actatatacca tacaacaga catgcttcat cccatagact tottgacata gcttcaaatg 60
 agtgaaccca tcttggttt atatacatal atgttctcag tattctggga gcccttccac 120
 ttcttcaaac cttgttctt atgaacactg aaaaatggga ttgtgaaga gttcaaaagt 180
 tatagcttga ttacgtagt agtttctgaa gtctacattc aatccagaca cttagtctag 240
 tgttaaacctg tgatttttca aaaaatcatc ttgagaatc tctttcagag gtattttcat 300
 ttttacttct tgaattattg tgtttctatc attagggtag t 341

<210> 42
 <211> 101
 <212> DNA
 <213> Homo sapien

<400> 42
 acttactgaa ttttgttctg tgccttctcc tatttagtgt tgtatccata atacttctat 60
 gtttcaaac ttctaaataa ctcaatttca gtggcttcat a 101

<210> 43
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 43
 acatcttctgt cagagctctaa gatgtgttct caaatcaca tctcttcttg gtcctccccc 60
 tccagggctgg tctcacactg taatttagagc tattgaggag tctttacagc aatctagat 120
 ccagatgcct tgcctagctc agagttctag agttatgttt cagaaagctc aagaaaccca 180
 cctcttgaga ggtcagtaaa gaggaattaa tatttctat ctacaaatg accacaggat 240
 tggatacaga acgagagctc tctggataa ctcaagagctg agtaactgcc cggggggcgc 300
 t.cga 305

<210> 44
 <211> 852
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(852)
 <223> n = A,T,C or G

<400> 44
 acataaatac cagagaaaag tagtctttga atattttacg tccaggagtt ctttqtttct 60
 gattattttg tgtgtgtttt ggtttgtgtc caaagtattg gcagctccag ttttcatttt 120
 ctctccatcc tggggcatcc ttcccaatt tatataccag tcttcgtcca tccacargct 180
 ccagaatttc tctttttag taatatctca tgcctgggt gagctttcca taggtcatgc 240
 tgcgttgtt cttcttttta ccccatagct gagccactgc ctctgatttc aagaacctga 300
 agacgctct agatcgggtc tcccaattta taatcctgg attcttgtct gggctcaga 360
 ggatgtcggc gatgaattcc cataagtgag tccctctcgg gttgtgtttt ttgggtgtgg 420
 acttgacagg ggggtcttgc tctttttcca tatcaggfga ctctgcacaa ggaaggtgac 480
 tgggtggtgt catgagatc tgagcccggt agaaagtatt gctgtccacc aaatctactg 540
 tgctaccata gttgggtgtc talcaatagt cctngtcttt ccaggctgtc atgatggaag 600

gctcagtttg	ttcagtccttg	acaatgarat	tgtgltgtga	ctgggaacagg	tcactactgc	660
actggccgll	ccacttcaga	tgtctgcaagt	tyctgtagag	gaagtcgcac	gccgtccctg	720
ccgcucgggt	gaactcctgc	aaatcatgc	tgcaaggtg	ctcgccgttg	atgtcgaaat	780
cctggaaagg	gatacaattg	gcattccagct	ggttggtgtc	caggaggtga	tggagccact	840
cccaacctg	gt					852

<210> 45

<211> 234

<212> DNA

<213> Homo sapien

<400> 45

adaacagacc	cttgcctgct	aacgaacctca	tgtctatcaa	gttgggcgaa	tccgtgtccg	60
agttctgacac	catcgggagc	atcagcattg	cttcgcagtg	ccctaccgag	gggaactctt	120
gcctcgtttc	tggtctgggt	ctactggcga	acggcagaat	gcctaccgtg	ctgcagtgcc	180
tgaacgtgtc	ggtggtgtct	gaggaggtct	gcagttaagt	ctatgacccg	ctgc	234

<210> 46

<211> 590

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(590)

<223> n = A,T,C or G

<400> 46

actttttatt	taaatgttta	taaggcagat	ctatgagaat	galagaaaac	atgggtgtgt	60
acttggatagc	aatatttttg	agattacaga	gttttagtaa	ctaccaatta	cacagttaaa	120
agagagataa	tatattccaa	gcnatacaa	aatatctaat	gaagagatca	ggcaggaaaa	180
tgantataac	taattgacaa	tggaaaatca	attttaatgt	gaattgcaca	ttatcrttta	240
aaagctttca	aaanaaenaa	ttattgcagt	ctanttaatt	caaacagtyt	taaatgggat	300
caggataaan	aactgaaggg	canaaagant	taattttcac	ttcctgtaac	ncauccanac	360
ltacaaatggc	ttaaatgcac	ggaaaagca	gtggaagttag	ggaagbanto	aaggtcttct	420
tggtctctaa	cttgccttac	cttttgggtg	tggctttgat	cctctggaga	cagctgccag	480
ggctcctgtt	atatccacaa	tcccgcagc	aagatgaagg	gatgaaaagg	gacacatgct	540
gccttccctt	gaggagactt	catctcactg	gcacacactc	agtcacatgt		590

<210> 47

<211> 774

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(774)

<223> n = A,T,C or G

<400> 47

acaaagggggc	ataatgaagg	agtggggana	galcttzaag	aagggaadaa	aacgaggccc	60
tgaacagaaat	tttccctgnac	aacgggggctt	caaaataaatt	ttcttgggga	gattcaagac	120
gcttcactgc	ttgaacctta	aatggatgtg	ggacannatt	ttctgtaatg	acccctgaggg	180
cattacagac	gggactctgg	gaggaaaggt	aaacagaaag	ggacaaaagg	ctaatcccaa	240
aacatcaaan	aaaggaaagg	ggugtcatac	ctccuagcct	acacagttct	ccagggtctct	300

```

cctcatcccl: ggaaggacgac agtggaggga ccaatgacca tgtcccccgg cccctgltgt 360
ctggctcctg gtcttcagcc cccagctctg gaagccccc ctctgtgat ccttcgtggc 420
ccacactccl: tgaacacaca tccccaggtl ctcttcctgg acatggctga acctcctall 480
cctacttcgg agatgccttg ctccctgcag cctgtcaaaa tcccaactcar cctcccaacc 540
acggcatggg aagcctttct gacttgcctg altactccag catcttggaa caatccctga 600
ttcccactc cttagaggca agatagggtg gtaagagta gggctggacc acttggagcc 660
aggtgtctgg cttcaaatct tggctcatct acgagctatg ggaccttggg caagtactct 720
tcacttctat gggcctcact tctttctacc tgcaaaatgg gggataataa tagt 774

```

```

<210> 48
<211> 124
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{124}
<223> n = A,T,C or G

```

```

<400> 48
cnaaattga aattttataa aaaggcatct tctctctata tccataaaa. gatataattt 60
ttgcaantat aaaaatgtgt cacaatttat aatgttcctt aal. lccagct caacgcaact 120
tggt 124

```

```

<210> 49
<211> 147
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{147}
<223> n = A,T,C or G

```

```

<400> 49
gocgatgcta ctatcttall ggaaggagtg ggggtgttct tattattctc tcaacagctt 60
tgtggctaca ggtgggtgtc gactgcata aaaaattttt tccgggtgat tgcaaaaatt 120
ttagggcacc catatcccaa gcaatgt 147

```

```

<210> 50
<211> 107
<212> DNA
<213> Homo sapien

```

```

<400> 50
acattaaatt aataazagga ctgttcgggtc tctgtcaaaa caacaggctt gatataattgc 60
atgggtttag gttaggagga gttaggcata tgttttggga gaggggt. 107

```

```

<210> 51
<211> 204
<212> DNA
<213> Homo sapien

```

```

<400> 51
gtcctaggga gtctagggga cacacgactc tgggttcacg gggcgcacac acttgcacgy 60

```

```

cgggaaggaa aggcagagaa gtagacacgt caggggggaa tgcacgaaag gaaatcaag 120
gccttgcaag gtagagaaag ggactcaggg ctccacacac agccctgccc cacttgccc 180
ctccctttt gggaccagca atgt 204

```

```

<210> 52
<211> 491
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(491)
<223> n = A,T,C or G

```

```

<400> 52
acaaagataa cctttatctt ataacaanaa ttgcatagtc ttaaaggcta gtattgtgta 60
gggtattttt cnaagacta aagagataac tcaggtaaaa agtttgaat gtatcaaaac 120
ccatcagaca gggtttttaa aaacaacata ttaacaaatt agacaatcat ccttaaaaaa 180
aaaaactctt gtatcaattt cttttgttca aattgactga cttaattatt tttaaatatt 240
tcnaaaacac ttcctcaaaa attttcaana tggtagcttt canatgtacc ctcaagtccc 300
atggtgctcc gctaaataaa tctcgtgaga acttaccacc caccacaagc ttcttggggc 360
atgcaacagt gtcttttctc tttttttct tttcttttt ttacaggcac agaaactcat 420
caattttatt tggataacaa agggctctcc aattatattg aaaaataat ccaagttaat 480
atcaatcttg t 491

```

```

<210> 53
<211> 484
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(484)
<223> n = A,T,C or G

```

```

<400> 53
acataattta gcagggtctc ttauccataag atgctatttc ttaanaggtn tatgatctga 60
gtattaarag ttgctgaagt ttggtatttc tatgcagcat ttctcttttg ctttgataac 120
actacagaac ctttaaggac actgaattt agtaagttaa gttcagaaac attagctgct 180
caatcaaatc tctacataac actatagtaa ttaanncggt aaaaaaaagt gttgaatatc 240
gcactagtat anaccgctcc tgcaggata anactgcttc ggaacagaaa gggaaaaaac 300
agctctgank ttctttgtgc tgaataggag aaaggctgaa ttaacttgtc gctctccct 360
aatgattggc aggtcnggtc aatnccaaa catatccaa ctcaacactc ctttccncc 420
tancctganc ctgtgtattc caggandagg cggatggaat gggucagccc ccggaatctc 480
cant 484

```

```

<210> 54
<211> 151
<212> DNA
<213> Homo sapien

```

```

<400> 54
actaaacttc gtgcttgta actccataca gaaanaggty ccatccctga acacggctgg 60
ccactgggtc taactgtgac aaccgcaac acnaaaacac aatcccttgg cactggctga 120
tctatgtcct ctcaagtgc tttttgtttg t 151

```


<210> 55
 <211> 91
 <212> DNA
 <213> Homo sapien

<400> 55
 acctggcttg tctccgggtg gtccccggcg ccccccacgg tcccagaac ggacacttc 60
 gccctccagt ggatartcga gcaaaagtgg t 91

<210> 56
 <211> 133
 <212> DNA
 <213> Homo sapien

<400> 56
 ggccggatgtg cgttggttat atacaaatat gtcatttlat gtaagggact tgagtatact 60
 tggatttttg gtatctgtgg gtccggggga cggctcagga accaataacc catggatacc 120
 aagggaacac tgt 133

<210> 57
 <211> 147
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(147)
 <223> n = A,T,C or G

<400> 57
 acctcggaga acctgagccg ctgctccgcc tutgggatga ggtgatgcan gngtggcgc 60
 gactgggagc tgagcccttc ccttgggcc tgcctcagag gattgttggc gaactgcana 120
 tctcantggg ctggatncat gcagggt 147

<210> 58
 <211> 198
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(198)
 <223> n = A,T,C or G

<400> 58
 acagggatat aggttttaag ttattgttat tgcataatar attgaatttt ctgtatactc 60
 tgattacata ctttatcct tcaaaaaga tgcataattt aatttttatg ccatttatc 120
 attacaaat gaggtaacct gtaaatgaga agtcatagata gcaatgaatt tcaactagtt 180
 ttgacttcta agtttgggt 198

<210> 59
 <211> 330
 <212> DNA
 <213> Homo sapien

<400> 59

acacacacatg	ggttctgagg	agctcattatc	agcaaaacga	gtgatggcta	ctgaaaagat	60
ccattgaaa	ttatcattaa	tgatttttaa	tgacaggtta	tcaaaaaatc	actcaatttt	120
cacctgtgct	agcttgctaa	aalgggggtt	aactctagag	caaatatagt	atctttctgaa	180
tacagtcaat	aaatggaaaa	gccagggcct	acaggtgggt	tcagagcttt	ccagacccag	240
caggaggaat	ctattttatc	acatggatct	cgtctgtgac	tcaaaatacc	caatgatatt	300
tttctctctt	atlggaattc	tttgaagagt				330

<210> 60

<211> 175

<212> DNA

<213> Homo sapien

<400> 60

acagtgggtg	ccttctacat	tectgacggc	tccttcacca	acatctgggt	ctacttcggc	60
gtcgtgggt	ccttctcttt	catctccttc	cagctggctg	tgctcatcga	ctttgcgcac	120
tectggaacc	agcgggtggt	gggcaaggcc	gagggagtgc	attccctgtc	ctggc	175

<210> 61

<211> 154

<212> DNA

<213> Homo sapien

<400> 61

acccacattt	tcttctgtg	agcgtctgg	acttctcaat	gctacatgat	gaggggtgagt	60
ggttgttct	cttcaacagt	atcttccctt	ttccggatct	gctgagcagg	acagcagtag	120
tggactgcac	agccccgggg	ctccacattg	ctgt			154

<210> 62

<211> 30

<212> DNA

<213> Homo sapien

<400> 62

cgtctgagcc	ctatagttag	tgtattaga				30
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<210> 63

<211> 89

<212> DNA

<213> Homo sapien

<400> 63

acaagtcaat	tcagcaccct	ttgcctctta	aaatgacca	tcttttatat	ttaatgcttc	60
ctgtatgaat	aaaaatggtt	atgtcaagt				89

<210> 64

<211> 97

<212> DNA

<213> Homo sapien

<400> 64

accggagtaa	ctgagtgggg	acgctgaatc	tgaatccccc	aataaataaa	pyttctgcag	60
atcagtgca	ccaggatttg	gtccttgggc	ctggggg			97

<210> 65
 <211> 377
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (377)
 <223> n = A,T,C or G

<400> 65
 acaacaanaa nt.ccccttctt taggcccactg atgggaaacct ggaacccccc tttgatggca 60
 gcctggcgctc ctaggcccttg acacagcggc tgggggtttgg gctntcccaa accgcacacc 120
 ccaacccctgg tctaccccaca ntctctggcta tgggctgtct ctgcractga acatcagggt 180
 tccgglcataa natgaaatcc caanggggac agaggtcagt agagggaagt caatgagaaa 240
 ggtgctgttt gctcagccag aaaaacagctg cctggcattc ggcgctgaa tatgaaccog 300
 tgggggtgaa ctacccccc gagggaatcat gcttgggcga tgcxaanggtg ccaacaggag 360
 gggcgggagg agcatgt 377

<210> 66
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 66
 acgcctttcc ctacagaattc agggaaagaga ctgtcgccctg ccttctctcg ttgttgctg 60
 agaacccctg tgcaccttcc caacatatac accctcgctc catctctgaa ctcaaacang 120
 aggaartaac tgcaccttg tctctctccc agtccccagt tcaacctcca tccctcacc 180
 tctctcactc taagggatct caacactgac cagcacaggg gccctgaatt tatgtggttt 240
 ctatatattt tttaataaga tgcacttctt gtcatttttt aatcaagtct gaagaattac 300
 tgttt 305

<210> 67
 <211> 385
 <212> DNA
 <213> Homo sapien

<400> 67
 actacacaca ctccacttgc cctctgtgaga cacttctgtcc cagcacttta ggaatgctga 60
 ggtcggacca gccacctctc atgtgcaaga ttgcccagca gacctcaggt ctgagagctc 120
 cctttttaaa aaaggggact tgettaaaaa agaagtcctag ccacgattgt gttagcagc 180
 tgtgctgtgc tggagattca cttttgagag agttctcttc tgggaacctga tctttagagg 240
 ctgggcagtc ttgcacatga gatggggtg gtctgatctc agcaactcctt agtctgcttg 300
 cctctccccc ggcctcagcc tggccacac tgettacagg gcaactctcag atgcccatc 360
 catagtttct gtgctagtgg accgt 385

<210> 68
 <211> 73
 <212> DNA
 <213> Homo sapien

<400> 68
 actkaucag atacttttt accucagatg gggatcttct ttgtaaaaa tgaanataaa 60
 gtttttttaa tgg 73

<210> 69
 <211> 536
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(536)
 <223> n = A,T,C or G

<400> 69

aactagtcacag	tgtgggtggaa	tctcattgtg	ttggggggtc	tcacccctct	ctcctgcagc	60
tccagctttg	tgctctgct	ctgaggagac	catggcccag	catctyagta	ccctgctgct	120
cctgctggcc	accctagctg	tggccttggc	ctggagccuc	aaggaggagg	ataggataat	180
ccgggtggc	alctataacg	cagacctcaa	tgatgagtgg	gtacagcgtg	cccttcactt	240
cyccctcagc	gagtataaca	aggccaccna	agatgactac	tacagacgtc	cyctgrrggg	300
actaagagcc	aggcaacaga	ccgttggggg	ggtgaattac	tctctcyacg	tagaggttgg	360
ccyacccta	tgtaccaagt	cccagcccaa	cttggacacu	tgtgcttcc	atgaacagcc	420
agaactgcag	aagaaccagt	tgtgctcttc	cgagatctac	gaagttccct	ggggagacaa	480
gaangtccct	gggtgaaatc	caggtgtcaa	gaaatccctan	ggatctgttg	ccaggc	536

<210> 70
 <211> 477
 <212> DNA
 <213> Homo sapien

<400> 70

atgacuccctc	acaggggccc	tctcagccct	ccaatgacc	tcgggtctag	ccctgtgatt	60
tcacttccac	tccatcaagc	tcttcatact	aggcctacta	accacacacu	taaccatata	120
ccatgcatgg	cgcatgttaa	caggagaaag	cacataccac	ggccaccaca	caccacotgt	180
ccaaaaaggg	cttcgatagc	ggataatccc	atctattacc	tcagaagttt	ttttcttcgc	240
agggtctttt	ctgagccttt	tacnacctcc	gcctagcccc	taccccccac	ctaggagggc	300
actggccccc	aacaggccac	cccccgctaa	atccccctag	agtrccactc	ctacacacat	360
ccgtattact	cyctacagga	gtatcaatca	cctgagctca	ccatagtcta	atagaaacaa	420
acggaaacca	aattattcca	agcactgctt	attacaattt	tactgggtct	ctattttt	477

<210> 71
 <211> 533
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(533)
 <223> n = A,T,C or G

<400> 71

agagctatag	gtacagtgtg	atctcagctt	tgcacacaca	ttttctacac	agutagtact	60
aggtaatta	agatatgtaa	agaaagaaat	cacaccatta	atcatggtaa	galttggtta	120
tgtgatttta	gtggtatctt	tggcaccctt	atctatgttt	tccaaacttt	cagcagtgat	180
attatttcca	taacttaaaa	agtyagtttg	aaaaagaaaa	tctccagcaa	gontctcatt	240
taaataaaag	tttgtcatct	ttaaaaatcc	agcaatattg	gactttttta	aaaagctgtc	300
aaatgggtgt	gacnctacta	ataattatta	gaatcacatt	taaaaanac	gagtacctca	360
agttagtttg	ccttgaaaaa	tatcaaatat	aaactttaga	gaatgtaca	taaaagantg	420
cttcgttaatt	ttggagtang	aggttccctc	ctcaactttg	tatttttcaa	aaqtacatgg	480
taaaaaaaag	aattcacac	agtatataag	gctgtaaaat	gaaggaattct	gcc	533

<210> 72
 <211> 511
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(511)
 <223> n = A,T,C or G

<400> 72
 tal:taaggaa aacacaccca cataattcaa claucaaaaga anactgcttc agggcggtgta 60
 aatgaaagg cttccaggca gttatctgat taaagaacac taanagaggg acaaggctaa 120
 aagcggcagg atgtctacac tatencaggc gctatttggg ttggctggay gactctgga 180
 aacratggan agattggtgc tgganacgc cgtggctatc ctcatttgtt atfacanagt 240
 gaggttcctt gtgtgccac tggtttgaaa accgttctnc aataafgala gaatagtacc 300
 cacatgagaa ctgaaatggc ccaaacuccg aaagaaagcc caatagatc ctcaagaaac 360
 gcttctaggg acataaccc atgaagaaaa galggcctcc ttgtgcccc gtctgttatg 420
 atttctctcc attgtagcna naaacccgtt cttctaagca aacnucggtg atgatggcna 480
 aatacaacc cctcttgag naacnggagg a 511

<210> 73
 <211> 499
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(499)
 <223> n = A,T,C or G

<400> 73
 cagtgcacgc actggfagca gtaccagtac caataacagc gacagtgcga gtgcacagac 60
 cagtggtggc ttcagtgttg gtgccagccu gacggcact ctacatcttg ggcctcttgc 120
 tggccttggt ggagccagtg ccagccaccg tggcagctct ggtgctgtg gttctctcta 180
 caagtgaagt tttagatatt gttaatcctg ccagtcttct cttcgaagcc aggggtgcac 240
 ctacagaaac tactcaaac agcactctag gcagccacta tcaatcaatt gaagttgaca 300
 ctctgcatta aatctatttg ccatttctga aaaaaaanaa aaaaaaaggc cggcrgctcg 360
 antctagagg gcccgcttaa acccgctgat cagcctcgac tgtgccttct anttgcacgc 420
 catctgttgt ttgccctcc ccgntgcct tcttgacc ccaggaggtg cactccact 480
 gtccttctt aataaat 499

<210> 74
 <211> 537
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(537)
 <223> n = A,T,C or G

<400> 74
 tttcataggg gaacacactg aggagatacl thangaattt ggaatcagcc gcaagagat. 60

```

ttatcagctt: aactcngata aaatcattga aagtaataag gtaaaagcta gtctctaact 120
tccaggccca cggctcaagt gaatttgaat actgcattta cagtgtagag taacacataa 180
cattgtahgc atggaaadct ggaggaanag taltaavagtg tectaccact ctatcaaga 240
aaagaaattac agactctgat tclacagtg tgattgaatt claaaaatgg taatcattag 300
ggcttttgat ttataaact ttgggtactt atactaaatt atggtagtth tactgcttr 360
cagtttgctt gatataattg ttgatattaa gattcttgac clatattttg aatgggttct 420
actgaaaaan gaatgatata ttcttgaaga catcgatata catttattth cactcttgat 480
tutacantgt agaaaatgaa ggaatatgcc caaattgtat ggtgatataa gtcccgct 537

```

```

<210> 75
<211> 467
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(467)
<223> n = A,T,C or G

```

```

<400> 75
caaanacaat tgttcaaaag atgcnaatga taacttadtg ctgragctca caaacacctc 60
tgcatactac acgtacctcc tctgtctcct caagtagtgt ggtctctttt gccatcacta 120
cctgctgtct gcttagaaga acggtcttct gctgcaangy agagaaatca taacagacgg 180
tggcacaagg aggcctctct tctctcatcg gttattgtcc ctagaagcgt ctctcgagga 240
tctagttggg cttctcttct gggtttgggc catttcanll ctcatgtgtg tactattcta 300
tcattattgt ataacggttt tcnaaccnct gggcaencag agaacctcac tctgtaataa 360
caatggagga tagccarggt gatctccagc accaaatctc tccatgttnt tccagagctc 420
ctccagccaa cccaaatagc cgtctctatn gtgtggaaca tccctgn 467

```

```

<210> 76
<211> 400
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(400)
<223> n = A,T,C or G

```

```

<400> 76
aagctgacag cattcgggcc gagatgtctc gctccgtggc cttagctgtg ctgcgctac 60
tctctcttct tggcctggag actatccagc gtaactccaa gattcaggtt tactcaagtc 120
atccagcaga gaattggaaag tcaaatctcc tgaattgcta tglgtctggg ttctatccct 180
ccgacattga agttgactta ctgaagaatg gagagagaaat tgaaaaagtg gaggattcag 240
acttgtcttt cagcaaggac tggctcttct atctcttgtc ctacactgaa ttacccccc 300
ctgaaaaaga tgaatatgcc tgcctgtgta acuatgtgac ttgtgtccag ccaagatng 360
tttagtgagg teganacatg taagucagcan catggggaggt 400

```

```

<210> 77
<211> 248
<212> DNA
<213> Homo sapien

```

```

<400> 77
ctggagtgac ttggtgttct aagcccttgc aggnagcaga atgcaccttc ttaggcacct 60

```

ccagctgccc	cgccggggga	tgcgaggctc	ggagcaccct	cgcccggtg	tgattgctgc	120
caggcactgt	tcaatctcag	ttttctgtcc	ctttggtccc	ggcaagcgtc	cttgcctgaa	180
gttccatctc	ggagcctgat	gtcttaccga	ataaaggtec	catgctccac	cggaaacaa	240
aaaaaaaa						248

<210> 78
 <211> 201
 <212> DNA
 <213> Homo sapien

<400> 78						
actagtcacag	tgtggtgga	ttccattgtg	tggggccca	cacaatggct	acctttaaca	60
tcaacccagac	ccgcacctgc	cngtgcacca	cgtgctgct	aacgaagta	tgatgcttac	120
tctgctactc	ggaaacatct	tttatgtaac	taatgtatgc	ttctctgttt	ataaatgcct	180
gatttcacaa	aaacacacaa	a				201

<210> 79
 <211> 552
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (552)
 <223> n = A,T,C or G

<400> 79						
tctcttctgt	aggtttttga	gacaacacct	gacctaaact	gtgtccacga	cttctgaatg	60
tttaggcagt	gctagtaatt	tctctgtaat	gattctgtta	ttactttctt	attctttatt	120
cctctttctt	ctgaagatta	atgaagctga	aaattgaggt	ggataaatcc	aaacaggtag	180
tgtgatagta	taagtatctc	agtgcagatg	aaagtgtgtt	atatatatcc	attcacaact	240
atgcaagctc	gtacttaact	agggtttaact	aaattacatt	aatatgctgt	tgaacctart	300
ctgttccctg	gctagaaaaa	atcataaaca	ggactttgtt	agtttgggaa	gccaaattga	360
taatatctca	tgttttaaaa	gttgggctat	acataaanta	tacagaaata	tgggaatttta	420
tcccaaggaa	tatggggctc	atttatgaat	antacccggg	anagaaagtt	tgaatnaaac	480
cngttttggf	taatacgtta	atatgtcttn	aatnaacaa	gcntgactta	tttcacaaaa	540
aaacacacaa	aa					552

<210> 80
 <211> 476
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (476)
 <223> n = A,T,C or G

<400> 80						
acagggatct	gagatgctaa	ggccccagag	atcgtttgat	ccaacccctt	tattttcaga	60
ggggacaaatg	gggcctagaa	gttacagayc	atctagctgg	cgcgctggca	ccccctggct	120
caracagact	cccgagtagc	tgggactaca	ggcacaaggt	cactgaagca	ggccctgttt	180
gcuaattcag	ttgccacctc	caacttaaac	attcttcata	ctgtatgtcc	ttagtcatac	240
aggttaaacf	ttccccccca	gaaaaggcaa	cttaagttaa	atcttagagc	actttcatac	300
tcttctaagt	cctcttccag	cctcactctg	agtcctcctt	gggggttgat	aggaantctc	360

tcttgggtttt ctcaataaaa tctctatccc tctcatgttt aatttgggttc gcntaaaaat 420
 gctgaaaaaa ttaaatgtt clggttttccc tttaaaaaaa adaaaaaaa aaaaaa 476

<210> B1
 <211> 232
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)... (232)
 <223> n = A,T,C or G

<400> B1
 tttttttttg tatgccttcn ctgtggngtt attgttgcgt ccacccctgga ggagcccagt 60
 ttctttctgt tctttctttt ctgggggato ttcctggctc tgvccctcra ttccagcct 120
 ctcatcccca tcttgcatt ttgtagggt tggaggcgct ttcctggtag vccctcagag 180
 ctccagtcag cgggaataag tccctaggggt ggggggtgtg gcaagccggc ct 232

<210> B2
 <211> 383
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)... (383)
 <223> n = A,T,C or G

<400> B2
 aggcggggagc agagctaaa gccaaagcc: aggaagagtg gcagtgcag cactgggtgc 60
 agtaccagta ccaataacat ggcagtgcca gtgccagcac cagtggtygc tt.cagtgcgt 120
 gtgccagcct gacccgcact ctacatttg ggtctctcgc tggcctcggg ggagctgggt 180
 ccagcaccag tggcagctct ggtgctgtg gttctccta ccagtggat tttagatatt 240
 gttaatctg ccagctcttc tttcaagcc aggtgcate ctcaaaacc tactcaaac 300
 agaacctctg gcagcacta tcaatcaatt gaagtgcac ctctgcatta aatctatttg 360
 ccatttcana aaaaaaaa aaa 383

<210> B3
 <211> 494
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)... (494)
 <223> n = A,T,C or G

<400> B3
 accgaatttg gacgctggc ttatagcga tcatgtctc cagtattacc tcaagagga 60
 gggagatcga gtctatacgc tgaagaaatc tgaucogag ggacaacaga cctgctcagc 120
 ccctcctgct cggttctccc cagatgaca atactctcga caccgaatca ccatcaagaa 180
 acgcttcaag gtgtcatga cccagcaacc ggcgcctgtc ctctgagggt ccttaactg 240
 atgtcttttc tgcacctgt taccctctgg agactccgta acccaactct tgggactgt 300
 agccctgatg cctttttgct agccatctc tttggctcc agtctctcgt ggcgattgat 360

catgcttctg	tyaggcaatc	atgggtggca	caccatnaa	gggaacacal	ttgatttttt	420
tttencatat	tttaaatlac	naccayata	nttragaate	aatgaattga	aaaactctta	480
aaaaa	aaan					494

<210> 84
 <211> 380
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (380)
 <223> n = A,T,C or G

gctggtagcc	tatggcgtgg	cacagagang	gctcctgagg	cacgggacag	tgactcccca	60
agtatcctgc	gcacgctctt	ctaccgtccc	tacctgcaga	cttctgggca	gattcccccag	120
gaggaacatgg	acgtggccct	catggagcac	agcaactgct	cgtcggagcc	cggcttctgg	180
gcacaccctc	ctggggccca	ggcgggcacc	tgcgtctccc	agtatgcac	ctggctgggtg	240
gtgctgctcc	tctcatctt	cctgctcgtg	gccaacatcc	tgcttgctcc	ttgctccttg	300
ccatgttcag	ttacacattc	ggcaaggtac	agggcaccag	cnatctctac	tgggaaggcc	360
agcgttccg	cctcatccgg					380

<210> 85
 <211> 481
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (481)
 <223> n = A,T,C or G

gagttagctc	ctccacacc	ttgatgaggt	cgtctgcagt	ggcctctcgc	ttcataccgc	60
tnccatcgtc	atactgtagg	tttggccaca	cctcctgcac	cttggggcgg	ctaatatcca	120
ggaaactctc	aatcaagtc	cctcctatna	aacctgtggc	tggctctgtc	ttccgtccgg	180
tgtgaaagga	tctccagag	gagtgctcga	tcttccccc	acttttgatg	actttattga	240
gtcgtatctg	catgtccagc	aggaggttgt	accagctctc	tgacagtgay	gtcaccagcc	300
ctatcatgcr	nttgaacgtg	cgaagaaaca	ccgagccttg	tgtggggggg	gnagtctcac	360
ccagcttctg	cattaccaga	nagccgtggc	aaaaganatt	gacacctcgc	ccaggngaa	420
aaagaacacc	tcttggaggt	gctngccgct	cctcgtcunt	tgggtggngc	gcntncttt	480
t						481

<210> 86
 <211> 472
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (472)
 <223> n = A,T,C or G

<400> 86

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aacatcttcc tgtataatgc tgtgtaatat cgatccgagtc ttgtctgctg agaatccatt      60
atttggaaaa gaaacttnaa gactggacac tggatattaaa attcacaala tgaacactt      120
taaacagtgt gtaaalclgc tcccttactt tgtatccacc agtctgggaa taagggtatg      180
cctctattcc accgtttaaa agggcgclaa gcatttttga ttcaacatcl tttttttga      240
cacaagtcag aaaaagcaca aggtaacacg ttnttaattl gttagccaat tcactttctt      300
catgggtacg agccatttga tttaaaaagc aatttgcata atattgagcl ttgggagctg      360
atatntgagc ggaagancag cttttctact taccagaca caactccttt catattggga      420
tgttuacnaa agtcattgtct cttacagatg ggtatgcttt gtggcaattc tg      472

```

```

<210> 87
<211> 413
<212> DNA
<213> Homo sapien

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<220>
<221> misc_feature
<222> (1)...(413)
<223> n = A,T,C or G

```

```

<400> 87
agaaaccagt atctctnaaa acaacctctc atacccttgct gacttaattt tgtgtgagctg      60
tgtgtgtgag cgcataattat atagacaggc acatcttttt tacttttcta aaagcttatg      120
cctcttttgg atctatatct gtgaaaattt taatgatctg ccatatgttc ttggggacct      180
ttgtcttctg tglaaatggt actagagaaa acactctctt tatgagtcac tctagttngt      240
tttattcgac atgaaggaaa ttctccagatn acaaacctna caaactclcc cttgactagg      300
ggggacaaag aaaagcnaa ctgaacatna gaaacaattn cctggtgaga aatttcataa      360
acagaaactg ggtngtatat tgaaanang catcattnaa acgttttttt ttt      413

```

```

<210> 88
<211> 448
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(448)
<223> n = A,T,C or G

```

```

<400> 88
cgcagcgggt cctctctatc tagctccagc ctctcgcttg ccccaclccc cgcgtccgc      60
gtcctagccn accatggccg ggcctctgag cgcctccgct ctctgtgtgg ccacccctgg      120
cgtggccctg gccgtgagcc cgcagggccg ctccagtcct ggcaagccgc cgcgcctggt      180
gggaggccca tggaccctgc gtggaagaag aagggtgtgc gcgtgcactg gactttgccc      240
tcggenanta caacaaaccr gcaacnactt ttacnagcn cgcgtgacag gttgtgccc      300
cccaanccaa ttgttactng gggtaantaa ttcttggag ttgaacctgg gcaaaacnng      360
tttaccagaa ccaagcccat tngaacaatt nccctccat aacagccctt tttaaaaagg      420
gaanvanteo tgnctctttc caaatttt      448

```

```

<210> 89
<211> 463
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature

```

<222> (1) ... (463)

<223> n = A,T,C or G

<400> 89

gaattttgtg	cactggccac	tgtgatggaa	ccattggggc	aggttgcctt	gagtttlatca	60
gtagtgttc	tgcacaggtt	ggtgttgtaa	catgggtatg	taaaatgtca	aaaaattagc	120
agaggtctag	gtctgcatac	caggcagacag	tttgtcngtg	tattttgtag	ccctggaagt	180
ctcagtgaca	agtttnttct	gatgcgaagt	tcnattcca	gtgtttttagt	cccttgcata	240
tttnatgttn	agacttgcc	ctntnaaatt	gcctttgtnt	tctgcaggta	ctatctgtcg	300
tttaacaaaa	tagaannact	tctctgcttn	gaanatttga	ataccttaca	tcnnaaaatn	360
aattctctcc	ccatannaaa	acccangccc	ttgggaanaa	ttgnaaaang	gntccttcnn	420
aattcnnana	anttcagntn	tcatacaaca	naavngganc	ccc		463

<210> 90

<211> 400

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (400)

<223> n = A,T,C or G

<400> 90

agggattgaa	ggtctntnt	actgtcggac	tgttcannca	ccaactctac	aagttgctgt	60
cttccartca	ctgtctgtac	gcntnttaac	ccagactgtc	tcttctataa	tagaacaact	120
tcttccccag	ccacatcttc	taggaccttt	ctggattcag	ttagtataag	ctcttccact	180
tcctttgtta	agacttcata	tggtaaaagt	ctaagtcttg	tggcaaggaa	tttaatttgt	240
cgtctctcaa	caatgtcttc	tccttgaagt	atttggctga	acaacccacc	ttaagttcct	300
ttgtgcctcc	attttaata	cacttaatag	ggcattggtn	cactaggtta	aattctgcaa	360
gagtcatttg	cttgcaaaag	ttgcgttagt	atatctgcca			400

<210> 91

<211> 480

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (480)

<223> n = A,T,C or G

<400> 91

gagctoggat	ccaataatct	ttgtctgagg	gcagcaacac	tatncagtgc	catggnaact	60
ggtctacccc	acatgggagc	agcatgcngt	agntatataa	ggtcattccc	tgggtcagac	120
atgcctcttt	gactacagtg	tgcacgtgct	ggtgatcttc	acacacrtcc	nnccgctctt	180
tgtggaaaaa	ctggcacttg	ncctggaaact	gcaagacatc	acttacaact	tcacccacga	240
garactttaa	aggtgttaaa	aagcgactct	tgcattgctt	tttgtccctc	cggcaccagt	300
tytcaatact	aaccgcctgg	tttgcctcca	tcacatttgt	gatctgtagc	tcaggataca	360
tctcttgcca	gtactgaaga	acttcttctt	ttgtttcaaa	agcaactctt	ggtgctgttc	420
ngatcaggtt	cccatttccc	agtcogaatg	ttcacatggc	atatnttact	tcccacaaaa	480

<210> 92

<211> 477

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(477)

<223> n = A,T,C or G

<400> 92

atauagccca	natcccacca	ogaagatgag	cttggtgact	gagaacctga	cgcggtcaat	60
ggctccgctg	tgcgccagc	gactctcacc	ctgctggag	cggttgatgc	tgcaactcct	120
cccaagcagg	cagcagcagg	gcgggtcaat	gaactccact	cgtgggttgg	ggcttgacgg	180
taantgcagg	aaagggctga	ccacctggcg	gtccaccagg	atgcccgaat	gtcggggacc	240
tgcagcgaag	ctcctcgatg	gtcatgagcg	ggagagcaat	gagcccaagg	gacctgcaca	300
gaaccttcgg	cctgttctct	ggcgccacct	gcagctgctg	ccgctnacac	tgggctcgg	360
acccagggag	aaacggcgtt	gaacagcgcg	acctcaagg	tgcacantgt	gtngcgtcc	420
aggaacgggt	ccagcgtgtc	caggtcaatg	tgggtgaanc	ctccgcgggt	aatggcg	477

<210> 93

<211> 377

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(377)

<223> n = A,T,C or G

<400> 93

gaacggctgg	acctgcctc	gcattgcgct	gtcggcagga	ataccttggc	aagcagctcc	60
agtccgagca	gccccagacc	gctgcggccc	gaagctaacg	ctgctctcgg	ccttcacctc	120
cgctcaatg	cagaaccant	agtgaggagca	ctgtgtttag	agctaacgag	gaacactgtg	180
tgatttlaet	tgggaatttc	ctctgttata	tagcttttcc	caatgctaat	ttccaaacaa	240
caacaccaa	ataacatgtt	tgectgttga	gttgtataaa	agtangtgat	cttgtatnta	300
aagaaaatcl	tactgttaca	tatactgott	gcaanttctg	tatttatagg	tnctctggag	360
ataantatat	tattaaa					377

<210> 94

<211> 495

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(495)

<223> n = A,T,C or G

<400> 94

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495

<210> 95
 <211> 472
 <212> DNA
 <213> Homo sapien

<220>
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 <222> {1}... (472)
 <223> n = A,T,C or G

<400> 95
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<210> 96
 <211> 476
 <212> DNA
 <213> Homo sapien

<220>
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 <222> {1}... (476)
 <223> n = A,T,C or G

<400> 96
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<210> 97
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 <212> DNA
 <213> Homo sapien

<220>
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 <223> n = A,T,C or G

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<210> 98

<211> 461

<212> DNA

<213> Homo sapien

<400> 98

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<210> 99

<211> 171

<212> DNA

<213> Homo sapien

<400> 99

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<210> 100

<211> 269

<212> DNA

<213> Homo sapien

<400> 100

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<210> 101

<211> 405

<212> DNA

<213> Homo sapien

<400> 101

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 <211> 470
 <212> DNA
 <213> Homo sapien

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<210> 103
 <211> 581
 <212> DNA
 <213> Homo sapien

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 <212> DNA

<213> Homo sapien

<400> 105

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<210> 106

<211> 473

<212> DNA

<213> Homo sapien

<400> 106

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<210> 107

<211> 1621

<212> DNA

<213> Homo sapien

<400> 107

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<210> 108

<211> 382

<212> PRT

<213> Homo sapien

<400> 108

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Gly Lys Arg Ser Leu Val Leu Asp Leu Lys Gln Pro Arg Gly Ala Ala
 50          55          60
Val Leu Arg Arg Leu Cys Lys Arg Ser Asp Val Leu Leu Glu Pro Phe
 65          70          75          80
Arg Arg Gly Val Met Glu Lys Leu Gln Leu Gly Pro Glu Ile Leu Gln
 85          90          95
Arg Glu Asn Pro Arg Leu Ile Tyr Ala Arg Leu Ser Gly Phe Gly Gln
100          105          110
Ser Gly Ser Phe Cys Arg Leu Ala Gly His Asp Ile Asn Tyr Leu Ala
115          120          125
Leu Ser Gly Val Leu Ser Lys Ile Gly Arg Ser Gly Glu Asn Pro Tyr
130          135          140
Ala Pro Leu Asn Leu Leu Ala Asp Phe Ala Gly Gly Gly Leu Met Cys
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Ala Leu Gly Ile Ile Met Ala Leu Phe Asp Arg Thr Arg Thr Asp Lys
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Gly Gln Val Ile Asp Ala Asn Met Val Glu Gly Thr Ala Tyr Leu Ser
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195          200          205
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Thr Ala Asp Gly Glu Phe Met Ala Val Gly Ala Ile Glu Pro Gln Phe
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Tyr Glu Leu Leu Ile Lys Gly Leu Gly Leu Lys Ser Asp Glu Leu Pro
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260          265          270
Asp Val Phe Ala Lys Lys Thr Lys Ala Glu Trp Cys Gln Ile Phe Asp
275          280          285
Gly Thr Asp Ala Cys Val Thr Pro Val Leu Thr Phe Glu Glu Val Val
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<211> 1289

<212> DNA

<213> Homo sapien

<400> 111

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ccatgcagtg	cttcagcttc	attaagaccn	tgatgatcct	cttcaattty	ctcatctttc	180
tgtgtggtgc	agccctgttg	gcagtgggca	tctgggtgtc	aatcgatggg	gcaccccttc	240
tgaagatctt	egggccactg	tcgctccagtg	ccatgcagtt	tgtcaacgtg	ggctactttc	300
tcategrcgc	cggtgttggt	gtctttgttc	ttggtttcct	gggtgtgtat	gggtgctaaga	360
ctgagagcca	gtgtgcccct	gtgaagtctt	tcttcactct	cttccctcctc	ctcatctgtg	420
aggttgcage	tgtgtgtgtc	gccttggtgt	acaccacac	ggctgagrac	ttctgtgagt	480
tgtgtgtagt	gcctgcccct	aagaagatt	atggttcera	ggaagacttc	actcaagtgt	540
ggaacacrac	catgaaaggg	ctcaagtgtc	gtggcttcac	caactatacg	gatttttgagg	600
actcacccct	cttcaagag	aacagtgcct	ttcccccact	ctgttgcaat	gacaacgtca	660
ccaaracagc	caatgaaacc	tgcaccaagc	aaaaggctca	cgacaaaaaa	gtayagggtt	720
gcttcaatca	gtttttgtat	gacatccgaa	ctaatgacgt	caccgtgggt	gggtgtggcag	780
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tacaetaagt	ccactctctg	ctctgcccct	actgtgtcca	catgggaact	gtgaagaggg	900
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gaatggaccl	gcctttctct	ctccagactt	gggtgtgat	agggaaccct	cctttttagcg	1020
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gtagccagtt	ctgttgccca	ttcccccagt	ctattaaacc	cttgatctgc	ccccagggcc	1140
tagtgggtgat	ccagtgcttc	tactggggga	tgagagaaag	gcattttata	gcctgggcat	1200
aagtgaatc	agcagagcct	ctgggtggat	gtgtggaagg	cacttcaaaa	tgcataaacc	1260
tgttccatgt	ctaaaaaaa	aaaaaaag				1269

<210> 112

<211> 115

<212> PRT

<213> Homo sapien

<400> 112

Met	Val	Phe	Thr	Val	Arg	Leu	Leu	His	Ile	Phe	Thr	Val	Asn	Lys	Gln
1				5					10					15	
Leu	Gly	Pro	Lys	Ile	Val	Ile	Val	Ser	Lys	Met	Met	Lys	Asp	Val	Phe
			20					25					30		
Phe	Phe	Leu	Phe	Phe	Leu	Gly	Val	Trp	Leu	Val	Ala	Tyr	Gly	Val	Ala
			35				40					45			
Thr	Glu	Gly	Leu	Leu	Arg	Pro	Arg	Asp	Ser	Asp	Phe	Pro	Ser	Ile	Leu
			50			55				60					
Arg	Arg	Val	Phe	Tyr	Arg	Pro	Tyr	Leu	Gln	Ile	Phe	Gly	Gln	Ile	Pro
65				70					75					80	
Gln	Glu	Asp	Met	Asp	Val	Ala	Leu	Met	Glu	His	Ser	Asn	Cys	Ser	Ser
			85					90					95		
Glu	Pro	Gly	Phe	Trp	Ala	His	Pro	Pro	Gly	Ala	Gln	Ala	Gly	Thr	Cys
			100				105						110		
Val	Ser	Gln	Tyr	Ala	Asn	Trp	Leu	Val	Val	Leu	Leu	Leu	Val	Ile	Phe
			115			120						125			
Leu	Leu	Val	Ala	Asn	Ile	Leu	Leu	Val	Asn	Leu	Leu	Ile	Ala	Met	Phe
			130			135					140				
Ser	Tyr	Thr	Phe	Gly	Lys	Val	Gln	Gly	Asn	Ser	Asp	Leu	Tyr	Trp	Lys
145				150				155						160	
Ala	Gln	Arg	Tyr	Arg	Leu	Ile	Arg	Glu	Phe	His	Ser	Arg	Pro	Ala	Leu
			165				170						175		
Ala	Pro	Pro	Phe	Ile	Val	Ile	Ser	His	Leu	Arg	Leu	Leu	Leu	Arg	Gln
			180				185						190		
Leu	Cys	Arg	Arg	Pro	Arg	Ser	Pro	Gln	Pro	Ser	Ser	Pro	Ala	Leu	Gln

195	200	205
His Phe Arg Val Tyr Leu Ser Lys Glu Ala Glu Arg Lys Leu Leu Thr		
210	215	220
Trp Glu Ser Val His Lys Glu Asn Phe Leu Leu Ala Arg Ala Arg Asp		
225	230	235
Lys Arg Glu Ser Asp Ser Glu Arg Leu Lys Arg Thr Ser Gln Lys Val		
245	250	255
Arg Leu Ala Leu Lys Gln Leu Gly His Ile Arg Glu Tyr Glu Gln Arg		
260	265	270
Leu Lys Val Leu Glu Arg Glu Val Gln Gln Cys Ser Arg Val Leu Gly		
275	280	285
Trp Val Ala Glu Ala Leu Ser Arg Ser Ala Leu Leu Pro Pro Gly Gly		
290	295	300
Pro Pro Pro Pro Asp Leu Pro Gly Ser Lys Asp		
305	310	315

<210> 113

<211> 553

<212> PRT

<213> Homo sapien

<400> 113

Met Val Gln Arg Leu Trp Val Ser Arg Leu Leu Arg His Arg Lys Ala	
1	15
Gln Leu Leu Leu Val Asn Leu Leu Thr Phe Gly Leu Glu Val Cys Leu	
20	30
Ala Ala Gly Ile Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val	
35	45
Glu Glu Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly	
50	60
Leu Val Cys Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly	
65	80
Arg Tyr Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile	
85	95
Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu	
100	110
Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly	
115	125
Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu	
130	140
Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala	
145	160
Tyr Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr	
165	175
Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu	
180	190
Gly Thr Gln Glu Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu	
195	205
Thr Cys Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Ala Leu Gly	
210	220
Pro Thr Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Ser Pro His	
225	240
Cys Cys Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu	
245	255
Leu Pro Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg	

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      260      265      270
Arg Leu Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe
      275      280      285
Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val
      290      295      300
Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
      305      310      315      320
Val Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu
      325      330      335
Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg
      340      345      350
Ala Val Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala
      355      360      365
Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
      370      375      380
Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala
      385      390      395      400
Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly
      405      410      415
Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu
      420      425      430
Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala
      435      440      445
Gly Gly Ser Gly Leu Leu Pro Pro Pro Ala Leu Cys Gly Ala Ser
      450      455      460
Ala Cys Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala
      465      470      475      480
Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
      485      490      495
Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser
      500      505      510
Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala
      515      520      525
Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp
      530      535      540
Lys Ser Asp Leu Ala Lys Tyr Ser Ala
      545      550

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<210> 114

<211> 241

<212> PRT

<213> Homo sapien

<400> 114

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Met Gln Cys Phe Ser Phe Ile Lys Thr Met Met Ile Leu Phe Asn Leu
1      5      10      15
Leu Ile Phe Leu Cys Gly Ala Ala Leu Leu Ala Val Gly Ile Trp Val
20      25      30
Ser Ile Asp Gly Ala Ser Phe Leu Lys Ile Phe Gly Pro Leu Ser Ser
35      40      45
Ser Ala Met Gln Phe Val Asn Val Gly Tyr Phe Leu Ile Ala Ala Gly
50      55      60
Val Val Val Phe Ala Leu Gly Phe Leu Gly Cys Tyr Gly Ala Lys Thr
65      70      75      80
Glu Ser Lys Cys Ala Leu Val Thr Phe Phe Phe Ile Leu Leu Leu Ile

```

	85	90	95
Phe Ile Ala	Glu Val Ala Ala Ala	Val Val Ala	Leu Val Tyr Thr Thr
	100	105	110
Met. Ala Glu	His Phe Leu Thr	Leu Leu Val Val	Pro Ala Ile Lys Lys
	115	120	125
Asp Tyr Gly	Ser Gln Glu Asp	Phe Thr Gln Val	Trp Asn Thr Thr Met
	130	135	140
Lys Gly Leu	Lys Cys Cys Gly	Phe Thr Asn Tyr	Thr Asp Phe Glu Asp
145	150	155	160
Ser Pro Tyr	Phe Lys Glu Asn	Ser Ala Phe	Pro Pro Phe Cys Cys Asn
	165	170	175
Asp Asn Val	Thr Asn Thr Ala	Asn Glu Thr	Cys Thr Lys Gln Lys Ala
	180	185	190
His Asp Gln	Lys Val Glu Gly	Cys Phe Asn Gln	Leu Leu Tyr Asp Ile
	195	200	205
Arg Thr Asn	Ala Val Thr Val	Gly Gly Val Ala	Ala Gly Ile Gly Gly
	210	215	220
Leu Glu Leu	Ala Ala Met Ile	Val Ser Met Tyr	Leu Tyr Cys Asn Leu
225	230	235	240
Gln			

<210> 115
 <211> 366
 <212> DNA
 <213> Homo sapien

<400> 115
 getctttctc tccctcctc tgaatttaac tcttcaact tgcattttgc aaggattaca 60
 cattccactg tgatgtatat tgtgttgcaa aaaaaaataa gtgtctttgt tttaaatlac 120
 ttggtttgtg aatccatctt gcttttcccc ccttggaact agtccttaac ccattctctga 180
 actggttagaa aaacatctga agagctagtc tctcagcctc tgacaggtga attggatggc 240
 tctcagaacc atttcaccca gacagcctgt ttctatcttg tttaactaat tagtttgggt 300
 tctctacatg cctaaccaac cctgcttcaa tctgtcctat aagaatctgt gacttgaagt 360
 ttagtc 366

<210> 116
 <211> 282
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (282)
 <223> n = A, T, C or G

<400> 116
 acaaagatga accatttctt atatttatagc azaattaaaa tctaccctgta ttctaatact 60
 gagaatgag atnaaacaca atnttataaa gtctacttag agaagatcaa gtgaactcaa 120
 agacttactt attttcatat tttaagacac atgatttctc ctattttagt aacctgggtc 180
 ataagttaaa caaaggataa tgtgaacagc agagaggatt tgttggcaga aaatctatgt 240
 tcaatctnga acLatctana tcacagacat tctatttctt tt 282

<210> 117
 <211> 305

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (305)

<223> n = A,T,C or G

<400> 117

acacatgtcg	cttcaactgcn	tlcttagatg	cttctgggtca	acatanagga	acaggggacca	60
tatttatect	cncctctgaa	acaattgcaa	aatcaanacaa	aatatatgaa	acaattgcaa	120
ataaaggcaa	aatatatgaa	acaaacaggtc	tcgagatatt	ggaaatcagt	caatgaagga	180
tactgatccc	tgtcactgt	cctaatgcag	gatgtgggaa	acagatgagg	tcacctctgt	240
gactgcccc	gcttactgca	tgtatagagt	ttctangctg	cagttcagac	aggagagaat	300
tggt						305

<210> 118

<211> 71

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (71)

<223> n = A,T,C or G

<400> 118

accaagggtgt	ntgatctct	gaagtgggga	ctcttgattc	cgcacaaatc	tgagtggaaa	60
aantcctggg	t					71

<210> 119

<211> 212

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (212)

<223> n = A,T,C or G

<400> 119

actccgggttg	gtgtcagcag	gaagtggcat	tgaacatngc	aatgtggagc	cnaaacacaa	60
gaaaatgggg	tgaattggc	caacttctca	tnaacttatg	ttygcaantt	tgcacacac	120
agtaagctgg	cacttctaat	aaaagaaaat	tgaaggyttt	cttactaenc	ygattaant	180
aatggantca	aganactccc	agguctcagc	gt			212

<210> 120

<211> 90

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (90)

<223> n = A,T,C or G

<400> 120

ectcgttgcg nalcaggggc ccccccagagt caccgttgcg ggagtccttc tggctcttgcg 60
ctccgcctggc gcagaaacatg ctgggggtggt 90

<210> 121

<211> 218

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{218}

<223> n = A,T,C or G

<400> 121

tgtatcgtga anacgacaga nagggtctgtc aaaaatggag aanccttgaa gtcattttga 60
gaataagatt tgcctaaaga tttggggcta aaacatgggt attgggagac atttctgaag 120
atatncangt aaattangga atgaattcat ggtctcttctt ggaattcctt taagatngcc 180
agcatanact tcatgtgggg atancagcta ccttctga 218

<210> 122

<211> 171

<212> DNA

<213> Homo sapien

<400> 122

taggggtgta tycactgta aggacaaaga ttgagactca actggcttaa ccaataaagg 60
catttgcttag ctcatggagc aggaagtcgg atgggtggggc atcttcaglg ctgcatgagt 120
caccaccccg gcgggggtcat ctgtgccaca ggtccctgtt gacagtgcgg t 171

<210> 123

<211> 76

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{76}

<223> n = A,T,C or G

<400> 123

ctatagcgtga agacnacaga atgggtgtgtg ctgtgctatc caggaaacaca ttattattca 60
ttatcaanta ttgtgt 76

<210> 124

<211> 131

<212> DNA

<213> Homo sapien

<400> 124

acctttcccc aaggccaatg tctgtgtgtg taactggccg gctgcagggc agctgcaatt 60
caatgtgtgt ggtcatatgg aggggagggg actctaaat agccaatttt attctcttgg 120
ttaagatttg t 131

<210> 125
 <211> 432
 <212> DNA
 <213> Homo sapien

<400> 125
 accttatctc ctggctatga aatagatggt ggaaaattgc gttaccaact ataccactgg 60
 cttgaanaag aggtgatagc ttttcagagg acttgtgact ttgctcag ttgtgaagaa 120
 ctacagtcctg cttttggcag aatgagat gaatttggat taatgagga tgcagaagat 180
 ttgctcagc aacaaagt gaaccaactg agagaaatt ttcaggaaa aagacagtgg 240
 ctcttgagt atcagtcact tttgagagt tttcttagtt actgcatact tcatggatcc 300
 catgggtggg gtcttgcatc tgaagaatg gaattgattt tgccttttgc agaattctag 360
 caggaaacat cagaaccact attttctagc cctctgtcag agcaaacctc agtgcctctc 420
 ctctttgctt gt 432

<210> 126
 <211> 112
 <212> DNA
 <213> Homo sapien

<400> 126
 acacaacttg aatagtaaa tgaactga gctgaaattt ctaattcact ttctaaccat 60
 agtaagaaatg ttatttccc ccagggatca ccaatatatt ataaattt gt 112

<210> 127
 <211> 54
 <212> DNA
 <213> Homo sapien

<400> 127
 accacgaac cacaacaa atggagcat caatccctt gccaaagaca gcag 54

<210> 128
 <211> 323
 <212> DNA
 <213> Homo sapien

<400> 128
 acctcattag taattgtttt gttgtttcat tttttctaa tgtctccct ctaccagctc 60
 acctgagaca acagatgaa aatggaaagg cagccagatt tctctcttgc tctctgctca 120
 ttctctctga agtctaggtt aaccttttg gggacccatt ataggcaata aacacagttc 180
 ccaagcatt tggacagttt ctgttggtt tttagaatgg tttcctttt tcttagcctt 240
 ttctgcaaa aggcctcact agtcccttgc ttgtcagtg gactgggctc ccaggggcct 300
 aggcctgctt cttttccatg tcc 323

<210> 129
 <211> 192
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1} ... {192}
 <223> n = A, T, C or G

<400> 129
 acatagcatgt ggttatattt ttaaatatca ttttgtatc actctgactt ttagcatag 60
 tgaataacata ctatcatcat tntgtgaa catgatcaga tacaaccaa atcatccatc 120
 tagcacatc atctgtgata naaagatagg tgaatttcac ttccttcacg ttggccaatg 180
 gataaacaaa gt 192

<210> 130

<211> 362

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(362)

<223> n = A,T,C or G

<400> 130
 ccttttttla tgaatgagt agactgtatg tttgaanatt tancacacac ctctctgaca 60
 tataatgacg caacaaaaag gtgtgttta gtctataggt tcagtttatg cccctgacaa 120
 gttctcattg tgttttgccg atctcttggc taatcgttgt atcttccatg ttattagtaa 180
 ttctgtattc catcttgtaa acgctgtgta gatgtaacct gctangaggc taactttata 240
 cttattttaa agctcttatt ttgttgtcat taaaatggca atttatgtgc agcaacttat 300
 tgcagcaggc agcactgtg ggttgggtgt aaagctcttt gctaacttta aaaagtaagt 360
 gg 362

<210> 131

<211> 332

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(332)

<223> n = A,T,C or G

<400> 131
 ctttttgaaa gatcgtgtcc actcctgtgg acatcttgtt ttaatggagt ttcccatgca 60
 gtangacttg tatggttgca gctgtccaga taaaaacatt tgaagagctc caaatgaga 120
 gttctccrag gttcgccttg ctgtcccaag tctcagcagc agctctcttt agyaggcatc 180
 ttctgaacta gattaaggca gcttgtaaat ctgatgtgat ttggtttatt atccaactaa 240
 cttccatctg ttatcacttg agaaagccca gactccccan gacnggtacg gattgtgggc 300
 atanaaggat tgggtgaagc tggcgttgtg gt 332

<210> 132

<211> 322

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(322)

<223> n = A,T,C or G

<400> 132
 acttttgcca ttttgtatat ataaacaatc ttgggaactt ctcttgaaaa ctagggtgccc 60

```

agtggctaag agaactccgat ttcgaagcaat tctgaaaggga aaacragcat gacacagaat. 120
ctcaaatcttc caaacagggg ctctgctggga acaatgaggg aggacctttg tatctcgggt 180
tttagcaagt taaaatgaan atgacaggaa aggcctcttct atcaacaaag aggaagagttg 240
ggatgcttct aaaaaaact ttggtagaga aaataggaat gctnaatctt agggaaagct 300
gtacacatct acaattggct ca 322

```

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<210> 133
<211> 278
<212> DNA
<213> Homo sapien

```

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<220>
<221> misc_feature
<222> (1)...(278)
<223> n = A,T,C or G

```

```

<400> 133
acaagccctc acaagttta ctaaatctggg attaatcttt ctgtantctt ctgcataatt 60
cttctttttc ttccatcttg gctcctgggt tgacaatttg tggaaacaa cctattgcta 120
ctatttaaaa acaatcaca atcttccct ctgaagctat cttaattcaa actattctg 180
ctattctgtt ttgtcaaaag aacttatatt ttcaaaata tctntatttg ctctatgggt 240
cccagaaac actaataaa accacagaga ccagcctg 278

```

```

<210> 134
<211> 121
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(121)
<223> n = A,T,C or G

```

```

<400> 134
gtttanaaaa ctgtcttagc tccatagagg aaggaatgtt aaactctgta ttttaaaara 60
tgatctcttg aggttaaaact tggctctcaa atgttatctt lacttgatct tgccttttg 120
t 121

```

```

<210> 135
<211> 350
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(350)
<223> n = A,T,C or G

```

```

<400> 135
acttanaacc atgcttagca catcagaato cctcaaagaa catcagata atccataacc 60
atancaagtg gtgactgggt aagcgtgcga caaaggtagg ctggcaccct acctgtgtgc 120
aaacttgata cttttgtctt aagtaggaac tagtatcacg ttcctaggan tgglaactca 180
gggtgccccn caactcctgc agccgtctct ctgtgcacgn cactgnaagg aactttcgct 240
ccacctcaat caagccctgg gccatgctac ctgcaactgg ctgaacaaac gttagctgag 300
ttcccaagga tgcgaagcct ggtgctcaac tccctggggcg tcaactcagt 350

```

<210> 136
 <211> 399
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(399)
 <223> n = A,T,C or G

<400> 136
 tgtaccgtga agacgacaga agttgcctgg cagggacagg gcaggggccga ggccagggtt 60
 gctgtgattg tatccggaata ntccctcgtga gaaaagatga tgagatgacg tgagcagcct 120
 gcagacttgt gtctgccttc aanaagccag acagggaaggc cctgcctgcc ttggtctga 180
 cctggcgggc agccagccag ccacagggtg gcttcttctt tttgtggtga caacnccag 240
 aaaaactgcc agggccaggg ttaggtgtga gtgggtangl gacataaaa caccagggtg 300
 tccagggac ccgggcagg gccatccca cctacagcca gcctgcccau tggcgtgatg 360
 ggtgcagang gatgaagcag ccagntgctc tctgtgtgt 399

<210> 137
 <211> 165
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(165)
 <223> n = A,T,C or G

<400> 137
 actggtgtgg tnggggggtga tgctgtgtgt aacagttgan gtgacttcac gatggtgtgt 60
 gggggaggtg tgtgaacgta gggatgtaga ngttttggcc gtgctaaatg agcttcggga 120
 ttggctgggt ccaactggtg tcaatgtcat tggtygggtt cctgt. 165

<210> 138
 <211> 338
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(338)
 <223> n = A,T,C or G

<400> 138
 actcactgga atgcccacatt cacaacagaa tcagagggtct gtagaaacat taatgggtcc 60
 ttaacttctc cagtaagaa cagggacttg aaatggaaac gttaacagcc acatgcccaa 120
 tgctgggcag tctccratgc cttccacagt gaaagggtct gagaannatc acatccaatg 180
 tcatgtgttt ccagccacac caaaagggtg ttgggggtga gggctggggg catananggt 240
 caggcctcag gaggcctcaa gttccattca gctttgccac tgtacattcc ccatttttaa 300
 aaaaactgat gccctttttt tttttttttg taanaattc 338

<210> 139
 <211> 382

<212> DNA

<213> Homo sapien

<400> 133

gggaatcttg	gtttttggca	tctggtttgc	ctatagccga	ggcactcttg	acagaacaaa	60
gaaggggact	tcagtaaga	agglaattta	cagccagccl	agtgcacgaa	gtgaaaggag	120
attcacaacg	acctcgat	tcttggtg	aggctggctg	gtcaccgc	tatcatctg	180
atttgcccta	ctcaggtgct	accggactct	ggccctgat	gtctgtagtt	tcacaggatg	240
ccttatcttc	ctctacacc	ccacagggcc	ccctacttct	tcggatgct	ttctaataat	300
gtcagctatg	tgcacatcc	tcttcatg	ctcctctcc	tttctacca	ctgctgagtg	360
gcctggaaact	tgtttaag	gt				382

<210> 140

<211> 200

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (200)

<223> n = A,T,C or G

<400> 140

accaaactt	ctttctgttg	tgctngattc	tactataggg	gtctngcttn	ttctaaanat	60
acttttcatt	taacacttt	tgcttaagtg	caggctgcac	tttgcctcat	anaattattg	120
ttttcacatt	tcactctgta	tgcttttgta	tcttanagca	ttggtgaat	cacatatctt	180
atcttcagca	taaaggagaa					200

<210> 141

<211> 335

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (335)

<223> n = A,T,C or G

<400> 141

actttatctt	cacaacactc	atatgttgca	aaaaacacat	agaaaaataa	agtttggtgg	60
gggtgctgac	ttaacttcaa	gtcacagact	tttatgtgac	agattggagc	agggtttgct	120
atgcatgtag	agaaccccaa	ctaatttatt	aaacaggata	gaaacaggct	gtctgggtga	180
aatggttctg	agaaccatcc	aattcacctg	tcagatgctg	atanactagc	ctttcagatg	240
ctttctacc	agttcagaga	tggttaatg	actantcca	atgggggaaa	agcaagatgg	300
attcacaaac	caagtaattt	taaaccaaga	cactt			335

<210> 142

<211> 459

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (459)

<223> n = A,T,C or G

<400> 142

accagggttaa	tattgcccna	tatatccttt	ccaattgggg	gctaaacaga	cggtgatttca	60
gggttgtttc	aagacaacnc	agcttcaatc	caagagaaat	tgtgaaccttt	catggagtat	120
ctgatggaga	aaacactgag	ttttgacaaa	tcttatttca	ttcagatagc	agtctgatca	180
caatgtgtcc	aacaacactc	aaacactaaa	tcaaatatna	tcagatgtta	aagattgggc	240
ttcaaacatc	atagccaatg	atgccccgct	tgcctataat	ctctccgaca	tcaaacnaca	300
tcaaaccttc	agtggccncc	aaacatttca	gcacagcttc	cttaactgtg	agctgtttga	360
agctaccagt	ctaggaacta	ttgactatnt	ttttcangct	ctgaatagct	ctagggatcl	420
caagcanggt	gggaggaacc	agctcaacct	tggcgtaat			459

<210> 143

<211> 140

<212> DNA

<213> Homo sapien

<400> 143

acatttcctt	ccaccaagtc	aggactcctg	gcttctgtgg	gggttccttat	cacctgaggg	60
aatccaaac	agtctctcct	agaaaggaat	agtgtcaaaa	acccacacca	ctctcctgag	120
accctccgaa	ttccctgtgt					140

<210> 144

<211> 164

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (164)

<223> n = A,T,C or G

<400> 144

acttcagtaa	caacatataa	taacaacatc	aaagtgtatat	tgcctctctt	gtcattttct	60
atctatacca	ctctcccttc	tyaaacaaan	aattactanc	caateactta	tacaaatttg	120
aggcaattta	tcaatatttg	ttttcaatca	ggaaacaaag	atgt		164

<210> 145

<211> 303

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (303)

<223> n = A,T,C or G

<400> 145

acgtagagca	cccaactttg	tatttqtact	ggcaaacatc	caagagcaat	tcttaaacaa	60
actggagggg	attttacccc	aattatccca	ttcatttaaa	tgcctccctc	ctcaggctat	120
ggaaggacag	tatcataagc	gggcccaggg	atccagatcc	ttccattttg	ataaacctta	180
gtagggggag	ccatccaagt	gacaggtcta	atcaaggag	gaatgggac	ataagcccag	240
tagtataaat	ttgcttaagc	gaacagcca	caaaagactt	acgcccgtgg	tgattaccat	300
caa						303

<210> 146

<211> 327

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (327)

<223> n = A,T,C or G

<400> 146

actgcagrtc aattagaagt ggtctctgac ttctatcanc ttctccctgg gttccatgac	60
actgggctgg agtgactcat tgctctgggt ggttgagaga gtccctttgc caacaggcct	120
craagtcagg gctgggattt gtctcttctc caattcttag caacaatatg ctggccactt	180
cctgaacagg gagggtggga ggagccayca tggaaacagg tgcactttt taaagttagc	240
agacttgccc ctgggctctt caccactact gatgaacttc tgtgcttgcg ggatgggaatg	300
tgggggtggg ctgtgtgact ctatgggt	327

<210> 147

<211> 173

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (173)

<223> n = A,T,C or G

<400> 147

acattgtttt tttagatca agcattgana gagctctcct taaagtgaca caatgggaagg	60
actgggaacac ataccacacat ctttgttctg agggataatt ttctgataaa gtcttgctgt	120
atattcaagg acatatgtta tatattatct agttccatgt ttatagccta gtt	173

<210> 148

<211> 477

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (477)

<223> n = A,T,C or G

<400> 148

acaaccactt tatchcatcg aatttttaac ccaaactcac tcaactgtgc ttctatcct	60
atgggatata ttatttgatg ctccctttca tcaracatat atgaataata cactcactact	120
gccctactac ctgctgcact aatcacattc ctttctgttc ctgacctga agcattggg	180
gtgttcctag tggccatcag tccanycctg cactcttgag ctttgagctc ctttgcctac	240
ncanccac ctcaaccgac ccactctctt acacagctac ctcttgctc tctaaaccca	300
tagattatnt ccaatttcag tcaattaaat tacttttaac actctacccg acatgtccag	360
caccactggg agcctttctc cagccaaac acacacacac acanccacac ccacacatat	420
ccaggcacag gctacctcat ctccacaatc acccctttta taccatgct atgggtgg	477

<210> 149

<211> 207

<212> DNA

<213> Homo sapien

<400> 149

```
acagttgtat tataatgcca agaatataar ttcgactgag agcatttcaq agggaagaa 60
taacgtatct tggagagcca aggaaggttt ctgtggggag lyygatgtaa gglggggcct 120
gatgataaat aagagtcagc caggtaagtg ggtggtgtgg tatgggcaca gtgaagaaca 180
tttcaygcag agggaacagc agtgaan 207
```

<210> 150

<211> 111

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (111)

<223> n = A,T,C or G

<400> 150

```
accttgattt cattgctgct ctgatggaaa ccccaactatc taatttagct aagacatggg 60
cacttaaaay tggctagctgt ttggacttct taactantgg catuttctggg t 111
```

<210> 151

<211> 196

<212> DNA

<213> Homo sapien

<400> 151

```
agcgcgccag gtcctattga acattccaga taccctatcat tactcgatgc tgttgataac 60
agcaagatgg ctctgaactc agggtcacca ccagctattg gaccttacta tgaaaccat 120
ggataccac ccgaaaacc ctatcccgca cagccactg tggcccccac tttctacgag 180
gtgcatccgg ctcaagt 196
```

<210> 152

<211> 132

<212> DNA

<213> Homo sapien

<400> 152

```
acagcatttl cacatgtaag aaggggagaa ttcttaaatg taggagaaag ataacagAAC 60
cttccctttt tcatctagtg gtggaaacct gatgctttat gttgacagga atagaaccag 120
gagggagtct gt 132
```

<210> 153

<211> 285

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (285)

<223> n = A,T,C or G

<400> 153

```
acaaagcccc nganaggcca ctggccgtgg tgtcatggcc tccaaacatg aaggtgtcag 60
```

```

cttctgctct tatgtctca tctgacaut ctttaccatt ttatctctcg ctcaagcayga      120
gcacatcaat aaagtcaaa gtcttggact tggccttggc ttggaggagag tcatcaaac      180
cttgctagt gaggtgagg cgcgcctcct ggaatgacggc atctgtgaag tctgacaca      240
gtctgcaggc cctgtggaag cgccgtccac acggagtnag gaatt                      285

```

<210> 154
 <211> 333
 <212> DNA
 <213> Homo sapien

```

<400> 154
accacagtcc tggtaggaca gggcttcctg accctctctg tgaaaagcca tattatcacn      60
accccaaat tttccttaaa catccttaac tgaaggggtc agcctcttga ctgcaggagac      120
cctaagccgg ttacacagct aactccact ggccttgatt tgtgaaattg ctgctgcttg      180
attggacag gagtccaagg tgttcagctc cctctctcgg tggaaagaga ctctgatttg      240
agtttcacaa attctggggc cactctgtrc tngctctct gaaataaaat ccggagaatg      300
gtcaggcctg tctatccat atggatcttc cgg                      333

```

<210> 155
 <211> 308
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> 11... (308)
 <223> n = A,T,C or G

```

<400> 155
actgggaaac ataaaccca catcacagtg ttgtgtcaaa gatcatcagg gcatggatgg      60
gaagtgctt tgggaactgt aaagtgccta acacatgato gatgattttt gttataatat      120
ttgaatcagg gtgcatacaa actctctctg ctgtctctcc tgggccccag cccagccccc      180
atcacagctc actgtctctg tcatccaggc ccagcatgta gtggttgatt ctctctgggt      240
gtttttagcc tccanaagtc tctctgaagc caacccaaac tctangtcta aggcattgctg      300
gcccctggg                      308

```

<210> 156
 <211> 295
 <212> DNA
 <213> Homo sapien

```

<400> 156
accttgctcg gtgcttggaa catattagga attcaaaata cgagatgata acagtgccta      60
ttattgattt ctgagagAAC tgttagacat ttagttagag atttcttaca caggaaactga      120
gaataggaga ttatgttttg cctcatatc ctctctctat ctctctgctt cattctatgt      180
ctaatatatt ctcaatcaaa taaggcttagc ataactcagga atctgaccaa ataccaatat      240
aaaaccagat gtctatcctt aagattttca catagaaaac aaattaaagc actat          295

```

<210> 157
 <211> 126
 <212> DNA
 <213> Homo sapien

```

<400> 157
acaaagttta atagtgtgtg cactgtgcat gtgctgaact gtgaatcca ccaattttt      60

```

gaagagcaaa acaaatctctg tcatctaatc tctatcttgg gtctgtggga tatctgtccc 120
cttagt 126

<210> 158

<211> 442

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (442)

<223> n = A,T,C or G

<400> 158

accactgggt cttggaaaca cccatcccta atacgatgat tttttgtgtg tgtgaaaatg 60
aancragcag gctgcacctt gtcagtcctt ccttccagag aaaaagagat ttgagaaagt 120
gcttgggtta ttccaccatta attccctouu ccaactcttc tgaqtcttcc cttactattt 180
ctggctgggttc tgaacaaayc aggtcatggg ttgttgaagc ttggggatcc cagtgaagta 240
natgtttgta gccctgcata cthagccctt cccacgcaca aacggagtggt cagagtcgtg 300
ccaacctctg tttccagatc caugtagaca gattcacagt ggggaattct ggaagctgga 360
nacagacggg ctctttgcag agccgggact ctgagangga catgaggggc tctgcctctg 420
tgttcattct ctgatgtcc t 442

<210> 159

<211> 498

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (498)

<223> n = A,T,C or G

<400> 159

acttccaggt aacgttgttg tttccggttg gccctgaactg atgggtgacg ttgtaggttc 60
tccaaacaaq actgaggttg cagagcgggt agggaaagag gctgttccag ttgacactgg 120
gctgctgttg actgttgttg attcctcact acggcccaag gttgtggaac tggcnaaaag 180
gtgtgttgtt gganttgagc tggggcggct gtggtaggtt gtgggcbctt caacaggggc 240
tgctgtgttg ccggggangt aanytgttgt gtcacttgag cttggccagc tctggaaagt 300
antanattct tccgaagge cagcgttgtt ggaagctggc ngggtcanty ttgtgtgtaa 360
cgaaccagtg ctgctgtggg tgggtgtana tcttcccaan agcctgaagt tatggtgtcn 420
tcaggtaana atgtggtttc agtgtccctg ggcngctgtg gaaggttcta nattgtcacc 480
aagggaataa gctgttgt 498

<210> 160

<211> 380

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (380)

<223> n = A,T,C or G

<400> 160

```

accatgcacac agcttccctg ccaactcacc aaggagacat caacctctag acagggaaac      60
agcttcagga tacttccagg agacagagcc accagcagca aacaaatat tccuatgct      120
ggagcatggc atagaggagc ctganaaatg tgggtctga ggaagcatt tgagtctggc      180
cactagacat ctcatcagcc acttctgtga agagatgcc catgaccera gatgctctc      240
cacccttacc ctcactctca cacacttgag utttccactc tgtatcctc taccatctc      300
gagaaaaatg gragtttgac cgaacctgtt cacaacggta gaggctgatt tctaatgaaa      360
cttgtagaal gaagcctgga
      380

```

<210> 161

<211> 114

<212> DNA

<213> Homo sapien

<400> 161

```

actccacac cccctctgagc aggcggctgt cgttcaaggc gtatctggcc ttgcccgtca      60
cactgtccac tggccctcta tccacttggc gcttaatccc tcgaaagagc atgt      114

```

<210> 162

<211> 177

<212> DNA

<213> Homo sapien

<400> 162

```

accttctgaa tcgaaacaaa tgatacttag tctagcttta atatcctcat atatatcaaa      60
gtttactac tctgataatt ttgtaaacca ggtaaccaga acatccagtc atacagcttt      120
tggtagata taacttggca ataaccagc ctggtgatac ataaaatc tactgt      177

```

<210> 163

<211> 137

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{137}

<223> n = A,T,C or G

<400> 163

```

catctatata gacaggcgtg aagacattca cgacaaaaac gcgaaattct atcccgtagc      60
canagaaggc agctacggct actcctacat cctggcgtgg gtggccttcg cctgcacctt      120
catcagcggc atgatgt
      137

```

<210> 164

<211> 469

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{469}

<223> n = A,T,C or G

<400> 164

```

cttatcaaa tgaattttct cctgggcagc gttgtgatct ttggcaccct cgtgaactta      60
tgcaatgcat catgctatct catcctcat gaggagttcc caggagattc aaccaggaaa      120

```

tgcatggatc	tcagggaan	caaacaccca	ataaactcgg	agtggcagac	tgacaactgl	180
gagacatgca	cttgctacga	aaagaaatt	tcattgttgc	cccttgcttc	tacacctgtg	240
gggttatgac	aaagcaactg	ccaaagaatc	ltaaggagg	aggactlqaa	gtatatngtg	300
gtggagaaga	aggaccnasa	aaagacctgt	tctgtcagtg	aatggataat	ctaatgtgct	360
tctagttaag	aaagggctcc	caggccaggg	cbaatctccc	tctggcctct	aatagtcatt	420
gattgtgtag	ccatgcttat	caglaaaag	atntttgagc	aaacacttt		469

<210> 165

<211> 195

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{195}

<223> n = A,T,C or G

<400> 165

acagtttttt	atanatatcg	acattgcagg	cacttcgtgt	cagtlkcatn	aaactgggtg	60
atccgtctgc	atccactatt	actlqgctag	agtaaaaatt	attcttatag	cccatgtccc	120
tgcaggccgc	ccgcctgtag	ttctcgcttc	agtcctcttg	gcacacaggg	tgcaggact	180
tctctgaga	tgagt					195

<210> 166

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{383}

<223> n = A,T,C or G

<400> 166

acacttttgt	agtgtggcac	atcagggggc	catacgggtc	acagtcactc	atagcctcgc	60
cgaggtcgga	gtccacacca	ccggtgtagg	tgtgctccat	cttgggcttg	gggcccacct	120
ttggagaggg	gatattgtgc	acacacatgt	ccacaaagcc	tgtgaactcg	ccaaagaatt	180
tttcragacc	agcctgaagc	aggggrrgat	gttcagcttc	agtcctccct	tctgcagggtg	240
gatgccaaac	tctgtatagg	tccgtgggaa	actgggtgtc	acntccacct	caacctgggc	300
gangatctta	taaagaggct	ccnagataaa	ctccacgaaa	cttctctggg	agctgctagt	360
nggggccttt	ttggtgaact	tcc				383

<210> 167

<211> 247

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{247}

<223> n = A,T,C or G

<400> 167

acagagccag	accttgggaa	taaatgaanc	agagattaa	actaaacccc	aahtcganac	60
tggagcayaa	actggagcaa	gaagtgggcu	tggggctgaa	glayagacca	aggccactgc	120

tatanccata cccagagcca actctcaggc caaggcnatg gttggggcag anccagagac	180
tcattctgan tccaaagtgg tggctygaac actggtcatg acanaygcag tgcctctgac	240
tgangtc	247

<210> 168

<211> 273

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(273)

<223> n = A,T,C or G

<400> 168

acttctaagt ttctagaag tggagagatt gtatcctcc cgaatctggg ttactttcaa	60
aatccctcan ccttggtctt cactactgtc tatcttgana gtgtcatgtt tccacaaagg	120
gctgaacoot gagcctgnat ttctactcat ccttgagaag ccttttccag taggggtggc	180
aattcccaac ttctctgcca caagcttccc aggnctcttc ccttggaagg ctccagcttg	240
agtcacagat aaactcatgg gctgcccctgg gca	273

<210> 169

<211> 431

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(431)

<223> n = A,T,C or G

<400> 169

acagccttgg ctcccccana ctccacagtc tcagtgcaga aagatcatct tccagcagtc	60
agctcagacc agggtnaagg gatgtgacat caacagtttc tgytttcaga acaggttcta	120
ctactgtcaa ctgacccccc atacttcttc aaaggtctgt gtaagtlttg cacagggtgag	180
ggcagcagaa aggggggtant tactgatgga caccatcttc tctgtatart ccccaotgac	240
cttgccatgg gcaaaaggcc ctaccacaaa aaccaatagga tcaatgctgg gcaccagctc	300
adgcacatca ctgacacccg ggatygaaaa agaantgcca acttccatc atcccaactgg	360
aaagtgatct gatactggat tcttaattac ctccaaaagg ttctgggggg catcagctgc	420
togaacactg a	431

<210> 170

<211> 266

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(266)

<223> n = A,T,C or G

<400> 170

acctgtgggc tgggtgtgta tgctgtgcu ggtgtctgaa agggagttca gagggtggagc	60
tcaaggagct ctgcaggcat ttgccaanc ctctccanag canaggagc aacttaact	120
ccccgtaga aaacacaccag attggagtc tgggaggggg agtgggggtg ggcatttgat	180

gtatacttgt caccctgaatg aangeagccng agaggaanga gacgaanatg anal.tygcct 210
tcaaagctag gggcctggca gytgga 256

<210> 171

<211> 1248

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{1248}

<223> n = A,T,C or G

<400> 171

ggcagccaaa	tcataaacgg	cgaggactgc	agcccgract	cgaagccctg	gcagggcgca	60
ctggctcatg	aaaacgaatt	gttctgctcg	ggcglcctgg	tgcattccga	gtgggtgctg	120
ttagccggau	actgtttcca	gaagtgaaty	cagagctcct	acaccatcgg	gctgggpcctg	180
cacagtcttg	agggcgacca	ahagccaggg	agccagatgg	tggaggcccg	cctctccgta	240
cggcagccag	agtacacacg	accttgctc	gctaacgacc	tcatgtctct	caagttggac	300
gaatccgtgt	ccgagctctg	caaatccgg	agcatccgca	ttgcttcgca	gtgcctctac	360
gcgggggaact	cttgccctgt	ttctggctgg	ggtctgctgg	cgcaacggcg	aatgcctacc	420
gtgtgtgagt	gcgtgaacgt	gtcggctggg	tctgaggagp	tctgcagtaa	gctctatgac	480
ccgtgtganc	ccccccagcat	gttctgcgcn	ggcggagggg	aagaccagaa	ggactcctgc	540
aacagtgact	ctgggggggc	cctgabtctc	aacgggtact	tycagggcct	tgtgtctttc	600
ggaaaagccc	cgtgtggcca	agttggcgtg	ccaggtgtct	acaccaacct	ctgcaaatct	660
actgagltga	tagagaaaac	cgtccaggcc	agtttaactc	ggggactggg	aaacccatgaa	720
attgaccccc	aaatcacctc	tygggaagga	attcagggaat	atctgttccc	agccctcctc	780
ccctcaggcc	caggagtcca	ggcccccagc	ccctccctcc	tcaaaucanag	ggtacagatc	840
ccagccctc	cctccctcag	ccuagggagt	ccagaccccc	cagccctcct	ccctccagac	900
ccaggagtc	agccctcct	cctccagacc	caggagtcca	gaccccccag	cctctcctcc	960
ctccagaccc	gggttcagg	cccccaaccc	ctctccctcc	agactragag	gtccagagcc	1020
ccaaacccct	altccccaga	cccagaggtc	caggtccag	ccctcctcc	ctccagaccca	1080
gcagtcacat	gccacctaga	ctntccctgt	acacagtgcc	cccttggtgg	acgttgaccc	1140
aaccttacca	gltgggtttt	catttttngt	ccctttcccc	tagatccaga	aataaagttt	1200
agagagagng	caaaaaaaa	aaabaaaaaa	aaaaaaaab	aaaaaaa		1248

<210> 172

<211> 159

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> {1}...{159}

<223> Xaa = Any Amino Acid

<400> 172

Met	Val	Glu	Ala	Ser	Leu	Ser	Val	Arg	His	Pro	Glu	Tyr	Asn	Arg	Pro
1				5				10						15	
Leu	Leu	Ala	Asn	Asp	Leu	Met	Leu	Ile	Lys	Leu	Asp	Glu	Ser	Val	Ser
			20					25					30		
Glu	Ser	Asp	Thr	Ile	Arg	Ser	Ile	Ser	Ile	Ala	Ser	Gln	Cys	Pro	Thr
			35				40					45			
Ala	Gly	Asn	Ser	Cys	Leu	Val	Ser	Gly	Trp	Gly	Leu	Leu	Ala	Asn	Gly
50						55							60		

Arg Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu
 65 70 75 80
 Glu Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe
 85 90 95
 Cys Ala Gly Gly Gly Gln Xaa Gln Xaa Asp Ser Cys Asn Gly Asp Ser
 100 105 110
 Gly Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe
 115 120 125
 Gly Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn
 130 135 140
 Leu Cys Lys Phe Thr Glu Tyr Ile Glu Lys Thr Val Gln Ala Ser
 145 150 155

<210> 173

<211> 1265

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...[1265]

<223> n = A,T,C or G

<400> 173

```

ggcagccccc actgcagccc ctggcaggcc ggcactggctc tggaaaaacg attgttctgc 60
tgggggctcc tgggtgcatcc gcaatgggtg ctgtcagccc ccaactgttt ccagaaactcc 120
tacaccatcg ggctgggccc gcacagtctt gagaccgacc aagagccagg gaggcagatg 180
gtggagggccc gctctctcgt acggcaccga gagtacaaca gaccttggct cgtcaacgac 240
ctcatgctca tcaagtttga cgaatccgtg tccgagcttg acaccatcng gacatcagc 300
attgcttctg agtgccctac cgggggggaa tcttgccctg ctctctggctg gggctcgtctg 360
gcgaacgggtg agtccacggg tgtgtgtctg cctctcttca ggaggccctc tgcacagtcg 420
cggggggctga ccagagagtc tgcgtcccah gcagaatgcc taccgtgctg cagtgcgtga 480
acgtgtcggg ggtgtctgag gaggctctga gtaagctctc tgaccrctg taccacccca 540
gcctgttctg .ggcggggcga gggcagagcc agaaggactc ctgcacaggt gartctgggg 600
ggcccttgat ctgcaacggg taattgcagg gcttctgtct tttcggaaaa gcccctgtgtg 660
gccaagtctg cgtgccaggg gtctacacca acctctgcaa attcactgag tggatagaga 720
aaaccgtcca ggcagttlaa ctctggggac tgggaaccca tgaaattgac ccccaaatat 780
atctgtcgga aggaattcag gaatatctgt tcccagcccc tctccctca ggcctaggag 840
tccagggccc cagccctccc tccctcaaac caagggtaca gatccccagc cctcctccc 900
tcagacccag gagtccagac ccccagccc ctcctcctc agacccagga gtccagcccc 960
tctcctctca gacccaggag tccagacccc ctagccctc ctcctcaga ccagggggtt 1020
gagggccccc acccctctc ctctcagagtc agagggtcaa gcccaccaac cctcgttccc 1080
cagacccaga ggttnaggtc ccagccctc ttcctcaga cccagnggtc caatgccacc 1140
tagatcttcc ctgnacacag tgcctccctg tggnaagttg acccaacctt accagttggg 1200
ttttcatttt tngtcccttt cccctagatc cagaaataaa gttttagaga ngngcaaaaa 1260
aaaaa 1265
  
```

<210> 174

<211> 1459

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...[1459]

<223> n = A,T,C or G

<400> 174

gggcagccgc	acactgtttc	caggaagtay	tcagagagctc	clacaccatc	gggctggguc	60
tgacaggtcl	tgaggccgac	cangagccag	ggagccagat	ggtaggaggcc	ayccctctccg	120
tacggcaccr	agagtacaac	agacccttgc	tcgctaacga	ccctcatgctc	atnagatttg	180
acgaatccgt	gtcccgagtct	gacaccatcc	ggagcatcag	cattgcttcc	cagtgcctta	240
ccgaggggaa	ctcttgcttc	gtttctggct	ggggtctgct	ggcgagccgg	gagctccagg	300
gtgtgtgtct	gcccctcttc	aggaggtcct	ctgcccaytc	gcggggggctg	acccagagct	360
ctgggtccca	ggcagaatgc	ctccgtgtct	gcagtgcgtg	aacgtgtcgg	tggtgtctga	420
ngaggtctgc	antaaqctct	atgaccctct	gtaccacccc	ancatgttct	gcgcccggcg	480
agggcaagac	cagaaggant	ccctgaaact	gagagagggg	aaaggggggg	gcagaccgct	540
cagggaaggg	gggagagagg	ggagacagag	acacacaggg	ccgcacggcg	agatgcagag	600
atggagagac	acacagggag	acagtgaaca	ctagagagag	aaatgagag	aaacagagaa	660
ataaacacag	gaatagagag	augcaaggga	gggagagaa	agaaacagac	atggggaggc	720
ayaaacacac	acacatagaa	atgcaagtga	ccctccaaac	gcattggggc	tgagggtggg	780
gacctccacc	caatagagaa	tcctcttata	acttttgact	ccccaaaaac	ctgactagaa	840
atagcttact	gttgacgggg	agccttacc	ataacataaa	laqtctgattt	atgcatacgt	900
tttatgcatt	catgcatatc	cttctgttga	attttttggt	atttcttaagc	tcacacagttc	960
gtctgtgcat	ttttttaaact	tgttgcacat	ctcctaaaaa	ttttctgattg	tgtttcttga	1020
aaaaatccaa	gtataagtg	acttctgcat	tcaaacacag	gttgttcaag	ggtcactctgt	1080
gtacccagag	ggaaacagtg	acacagattc	atagaggtga	aacacagag	gaaacaggga	1140
aaatcaagac	tctacaaaga	ggctgggcag	ggtgggtcct	gootgtaate	ccagtcacttt	1200
gggaggcgag	gcaggcagat	cacttgaggt	agggagttca	agacnagcc	ggccaaaatg	1260
gtgaaatcct	gtctgtacta	aaatbaucaa	agttagctgg	atctggtggc	aggcgcctgt	1320
aatccacagct	acttgaggag	ctgagtcagg	agaatttctt	gaatatggga	ggucagaggt	1380
gaagtgaatt	gagatcacac	cactctactc	cagctggggc	aacagagtaa	gactctgtct	1440
caaaaaaaa	aaababaa					1459

<210> 175

<211> 1167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{1167}

<223> n = A,T,C or G

<400> 175

gggcagccct	ggcagggcgg	actggctcatg	gaaaacgaat	tgtctctgctc	gggctgcttg	60
gtgcatccgc	agtgggtgct	gtcagccgca	cactgtttcc	agaaatccca	caccatcggy	120
ctgggctctg	acagtcttga	ggccgaccaa	gagccaggga	gcagagtggt	ggaggccagg	180
ctctccgtac	ggcaccagga	gtacaaacaga	ctcttgctcg	ctaacgacct	catgctcacc	240
aaatttggaag	aatccgtgtc	cgagtcctgac	acatccggga	gcatacgcat	tgtctcgacg	300
tgccttaccg	gggggaactc	ttgcctcgtn	tctggctggg	gtctgctggc	gaacggcaga	360
atgcctaccg	tgtgcaclg	cgtgaacgtg	tcgggtgggt	ctgaggangt	ctgcagtaag	420
ctctatgac	cgctgtacca	ccnagcagag	ttctgctggc	ggggagggga	agacnagaa	480
gactcctgca	acgggtgactc	tggggggccc	ctgatctgca	acgggtactt	gcagggcctt	540
gltgtcttctg	gaaaagccnc	gtgtgaccaa	cttggcgtgc	caggtgtcta	cacccaacctc	600
tgcaaatfcc	ctgagtggt	agagaaaac	gtccagacca	gttaactctg	gggactggga	660
acccatgaaa	ttgacnccca	aatcacatcct	gcggaangaa	ttcaggtaata	cttgttccca	720
gcccctctct	cctcaggccc	aggagtcag	gccccagcc	cctctctcccl	caaaaccaagg	780
gtacagatcc	ccagccnctc	ctccctcaga	cccaggagtc	cagacccccc	agccccctct	840
ccttcagacc	caggagtcca	gcccctctct	cttcagagcc	aggagtcagg	aucccccagc	900

```

cctcctcctccg tcagaccacg ggggtgcaggc cccccacccc tctcctcctca gagtcagagg      960
tccaggtccc caaccctctg ttccccagac ccagaggttc aggtccacag cctcctcctcc      1020
tcagaccacg cgggtccatg cccctctagan tntccctgta cccagtgccc ccttggtgga      1080
ngttgaccca accctaccag ttgggtttttt attttttgc cctttccccc agatccagaa      1140
ataaagfnta agagagcgc aaaaaaa

```

<210> 176
 <211> 205
 <212> PRT
 <213> Homo sapien

<220>
 <221> VARIANT
 <222> (1)...[205]
 <223> Xaa - Any Amino Acid

<400> 176

Met	Glu	Asn	Glu	Leu	Phe	Cys	Ser	Gly	Val	Leu	Val	His	Pro	Gln	Trp
1				5					10					15	
Val	Leu	Ser	Ala	Ala	His	Cys	Phe	Gln	Asn	Ser	Tyr	Thr	Ile	Gly	Leu
			20					25					30		
Gly	Leu	His	Ser	Leu	Glu	Ala	Asp	Gln	Glu	Pro	Gly	Ser	Gln	Met	Val
		35					40					45			
Glu	Ala	Ser	Leu	Ser	Val	Arg	His	Pro	Glu	Tyr	Asn	Arg	Leu	Leu	Leu
	50					55					60				
Ala	Asn	Asp	Leu	Met	Leu	Ile	Lys	Leu	Asp	Glu	Ser	Val	Ser	Glu	Ser
65					70				75					80	
Asp	Thr	Ile	Arg	Ser	Ile	Ser	Ile	Ala	Ser	Gln	Cys	Pro	Thr	Ala	Gly
			85					90						95	
Asn	Ser	Cys	Leu	Val	Ser	Gly	Trp	Gly	Leu	Leu	Ala	Asn	Gly	Arg	Met
			100				105						110		
Pro	Thr	Val	Leu	His	Cys	Val	Asn	Val	Ser	Val	Val	Ser	Glu	Xaa	Val
		115					120					125			
Cys	Ser	Lys	Leu	Tyr	Asp	Pro	Leu	Tyr	His	Pro	Ser	Met	Phe	Cys	Ala
	130					135					140				
Gly	Gly	Gly	Gln	Asp	Gln	Lys	Asp	Ser	Cys	Asn	Gly	Asp	Ser	Gly	Gly
145					150					155				160	
Pro	Leu	Ile	Cys	Asn	Gly	Tyr	Leu	Gln	Gly	Leu	Val	Ser	Phe	Gly	Lys
			165				170							175	
Ala	Pro	Cys	Gly	Gln	Leu	Gly	Val	Pro	Gly	Val	Tyr	Thr	Asn	Leu	Cys
			180				185						190		
Lys	Phe	Thr	Glu	Trp	Ile	Glu	Lys	Thr	Val	Gln	Xaa	Ser			
	195						200					205			

<210> 177
 <211> 1119
 <212> DNA
 <213> Homo sapien

<400> 177

ggcactcgc	agccctggca	ggcggaactg	gtcatggaaa	acgaattgtt	ctgctcgggc		60
gtcctgggtg	atcgcagtg	ggtaactgtc	gacgcacact	gtttccagaa	ctcctacac		120
atcgggctgg	gcctgcacag	tcttgaggcc	gacccagagc	cagggagcca	gatggtggag		180
gccagcctct	ccgtacggga	cccagagtac	aacagaccc	tgctcgctaa	cgaactcatg		240
ctcatcaagt	tgaacgaatc	cgtgtccgag	tctgacacca	tccggagcat	cagcatttgc		300

```

tcgcagtgcc ctaccacggh gaactcttgc ctggtttctg gctggggctc gctggcgaac 360
gatgctgtga ttgccatcca gtcaccagat gtgggaggct gggagtgtga gaagctttcc 420
caaccctggc aggggttgtac ctttcggca acllccagtg caaggacgic utgctgratc 480
ctcactgggt gctcactact gctcactguc tcaccrccgaa cactgtgac aactagccag 540
caccatagtt ctccgaaglc agactatcat gatlaactgt ctgactgtgc tgtctattgt 600
actaaacatg ccgatgttta ggtgaattta gcgtcacttg guctcaacca tcttggtatc 660
cagttatcct cactgaattg agatttcttg ctccagtgtc agccattccc acataatttc 720
tgacctacag aggtgaggga tcatalagct ctccaaggat gctygtactc cctccacaaa 780
ttcatttctc ctgttgtagt gaaaggtgag cctcttgag cctccnaggy tgggtgtgca 840
ggtcacatg atgaatgtat gatcgtgttc ccattaccca aggcctttaa atccctcatg 900
ctcagtacac cagggcaggt ctacratte ttcathtag gtatgctgtc cttcatgca 960
accacctcag gactcctgga tctctgctt agttgagctc ctgcctgtg cctccttggg 1020
gaggtgaggg agagggccca tggttcaatg ggalctgtgc agtctgacca cttaggtgc 1080
tlaataaaca gaaactgtga tgttaaaac aaaaaaaa 1119

```

<210> 178

<211> 164

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1) ... (164)

<223> Xaa - Any Amino Acid

<400> 178

```

Met. Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1          5          10          15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
 20          25          30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
 35          40          45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu
 50          55          60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
 65          70          75          80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
 85          90          95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Asp Ala Val
100          105          110
Ile Ala Ile Gln Ser Xaa Thr Val Gly Gly Trp Glu Cys Glu Lys Leu
115          120          125
Ser Gln Pro Trp Gln Gly Cys Thr Ile Ser Ala Thr Ser Ser Ala Arg
130          135          140
Thr Ser Cys Cys Ile Leu Thr Gly Cys Ser Leu Leu Leu Thr Ala Ser
145          150          155          160
Pro Gly Thr Leu

```

<210> 179

<211> 250

<212> DNA

<213> Homo sapien

<400> 179

```

utggagtgcc tgggtgtttc aagcccttgc aggaagcaga atgcaccttc tgaggcacc.      60
ccagclgccc cgggcggggg gatgcggggc tgggagcacc ctggccgggc tgtgattgt      120
gccaggcact gttcatctca gttttctgt ccttttgcct cgggcaaggc ttctctgtga      180
aagttcatct utggagcttg atgtcttcaac gaataaaggc ccatgctcc acccgaaaaa      240
aaaaaaaaa                                         250

```

```

<210> 180
<211> 202
<212> DNA
<213> Homo sapien

```

```

<400> 180
actagtccag tgtggcgaaa ttccattgtg ttggggccaa cacaatggc. aattttaaa      60
tcacccgggc ccggcccttg cccgtgcgcc aogctgctgc taaagacagt atgatgutta      120
ctctgctact cggaaactat ttttatgtaa ttaatglatg ctttcttgtt tataaatgcc      180
tgatttaaaa aaaaaa      202

```

```

<210> 181
<211> 558
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(558)
<223> n = A,T,C or G

```

```

<400> 181
cccytttkt. naggtttkk agacamccc agacctwaan ctgtgtcaca gaectcyngg      60
aatgtttagg cagtgcctagt aatttcytcg taatgattcc gttattactt tccctnattct      120
ttattccctt ttctctctga gattaatgaa gttgaaaatt gaggtgggla antacaaaaa      180
ggtagtgtga tagtataagt atctaaagtgc agatgaaagt gtgttatata tatccattca      240
aaattatgca agtttgttat tactcagggt taactaaatt actttaatol gctgttgaa:      300
ctactctgtt ctttggttag aaaaaattat aaccaggact ttgttagttt gggaaagucca      360
attgataata ttctatgttc taaaagttag gctatcctta aattattaaq aaatatggaw      420
ttttattccc aggaatatgg kgttcatttt atgaatatta cscrygatag awgtwtgagt      480
aaaaycagtt ttgggtwaaia ygtwaatatg tcmtaaatia acaakgcttl gaettatttc      540
caaaaaaaa aaaaaaa                                         558

```

```

<210> 182
<211> 479
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(479)
<223> n = A,T,C or G

```

```

<400> 182
acagggwttk grggatgcta agaccccrga rwtgcttga tcaaaccttg gottwtcttc      60
agaggggaaa atggggccta gaagktacag macatytagy lqgtgogmtg gnacccctgg      120
cctcacacag atcccgagc agctgggact acaggaacac agtcaactga gcaggccctg      180
ttwgcaattc aogttgcac ctccaaetta aacattcttc atatgtgatg tccctagctca      240
ctagggttaa acttccuac ccagaaaagg caactttagat aaaatcttag agtactttca      300

```

taatttttcta agtctctctc cagctctact	kkagagtcctin cytggggggtt gatagggaant.	360
ntctcttggc ttctctcaal:a aattctctat	ycatctcatg tttcaalttgg tarycatara	420
awtgstgaca aaatttaaat gttcttggtt	maattttaaa aaaaaa aaaaaa	479

<210> 183

<211> 384

<212> DNA

<213> Homo sapien

<400> 183

aggcgggagc agaaagctaaa gccaaagccc	aagaagaggtt gtagtgccag caatgggtgcc	60
agtaccagta ccaataaacag tgcagtgccc	agtgccagca ccagtggttg cttcagtgct	120
ggtgccagcc tgacggccac tctcacattt	gggtctcttc ctggcctcgg tggagctggt	180
gccagracca gtggcagctc tggtgctgt	ggttctctct acaggtgaga ttttagatat	240
tgttaatcct gccagttttt ctcttcagac	cagggtgcct cctcagaaac ctactcaaca	300
cagcaactta ggcagccact atcaatcaat	tgaagttgac actctgcatt aratctattt	360
gcatttcaa aaaaaa aaaa		384

<210> 184

<211> 496

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (496)

<223> n = A, T, C or G

<400> 184

accgaattgg gaccgctggc ttataagcga	tuatgttynt ccrptatkar ctcacgagc	60
aggagagatcg agtctatacg ctgaagaaat	ttgacccgat gggacaacag acctgctrag	120
cccatcctgc tgggttcttc ccagatgaca	aatactcttg acacggaatc accatcaaga	180
aacgcttcaa ggtgctcatg anccagccac	cgcgcctctg cctctgaggg tcccttaaac	240
tgatgtcttt tctgccacct gttacccctc	ggagactccg taaccgaact cttcggaact	300
tgagccctga tgcctttttg ccagccatcc	tctttggcat ccagttcttc gtygcgattg	360
attatgcttg tgtgaggcga tcatggtggc	atcaccata aagggaacac atttgacttt	420
ttttctctat attttaatt actacmagaw	tattwmagaw waaatgawtt gaaaaactst	480
tanaaaaaa aaaaaa		496

<210> 185

<211> 384

<212> DNA

<213> Homo sapien

<400> 185

gctggtagcc tatggcgkcg cccacggagc	ggctcctgag gccacggcac agtgacttcc	60
caagtatcyt ggcgsgcgtc ttctacgctc	cctacctgca gatcttcggg cagatccccc	120
aggaggacat ggacgtggcc ctcatyggag	acagcaactg ytcgncggag ccgggcttct	180
gggcacacnc tctyggggcc caggcgggca	cctgctctc ccagtatgcc aactggctcg	240
gggtgctgct cctgctcalt ttctgctcct	tggcacaacat cctgctggct aactcgctca	300
ttgcraatgt cagttacaca ttgggcaag	tacaggggcaa cagcgatctc tctgggaag	360
gcgcagcgtt accgcctcat ccgg		384

<210> 186

<211> 577

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (577)

<223> n = A,T,C or G

<400> 186

gagttagctc	ctccacaacc	ttgatgaggt	cgtctgacgt	ggcctctcgc	ttcataccgc	60
tnccatcgtc	atactgtagg	tttgccacca	cytcctggca	tcttgggggc	gcntaatatt	120
ccagggaact	ctcaatcaag	tcacccgtcg	tgaaacctgt	gggctgggtc	tgtcttcgcg	180
tccgtgtgaa	aggatctccc	agaaggagtg	ctcgatcttc	cccacacttt	tgalgaactt	240
attgagtcga	ttctgcatgt	ccagcaggag	gttgtaccag	ctctctgaca	gtgaggtcac	300
cagccctatc	atgcgcttga	mcgtgcccaa	garcacrgag	acttggtgtg	gggkkgaggt	360
ctcaccraga	ttctgcattc	ccagagagcc	gtggcacaag	acattgacaa	artcgccag	420
gtggaaaaag	amcamctcct	ggargtgctn	gocgctcttc	gtcmgttggg	ggcagcgctw	480
tcccttttgac	acacaacaac	glttaaggga	ttttcagccc	ccagaaantc	gtcatcatcc	540
agatntcgc	acagcactna	tccagttggg	attaant			577

<210> 187

<211> 534

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (534)

<223> n = A,T,C or G

<400> 187

aacatcttcc	tgtataatgc	tgtgcaatat	cgatccgcatn	ttgtctggtg	agaatycatw	60
actkggaaag	gmaaacattaa	agcrtggaca	ctggatttaa	aattcaccaat	atgcaacact	120
ttcaaacagt	tgtcaatctg	ctccrynac	t.tgtcatca	ccagtrtggg	ankaagggtg	180
tgccttatcc	acacctgtta	aaaggggcgt	aagcattttt	gattcaacat	cttttttttt	240
gacacaaagt	cgaaaaaagc	anaagtaaac	agttatyaat	ttgttagcca	attcactttc	300
ttcatgggac	agggccatyt	gatttaaaaa	gcacatttgc	taatatlgag	cttygggggc	360
tgatatttga	gcggaaagag	agcctttcta	cttcaccaga	cacaactccc	ttcatattg	420
ggatgttnac	naaggtwatg	tctctwacag	atgggatgct	tttgtggcaa	ttctgtcttg	480
aggatctccc	agtttattta	ccacttgca	aagaaggcgt	ttctctcttc	aggr	534

<210> 188

<211> 761

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (761)

<223> n = A,T,C or G

<400> 188

agzaacnagt	atctctnaaa	acaaacccctc	ataccttgtg	gaacctaat	tgtgtgcgtg	60
tgtgtgtgcg	cgcaatcttc	atugacaggc	acatcttttt	tacttttga	aaagcttatg	120
cctctttggg	atctatatct	gtgaaagctt	taatgatctg	ccatnatgtc	ttgggggaact	180

```

ttgtcttcty tgtaatggt actagagaaa acacctatnt tatgagccan tctagttngt. 240
tttattcgac atgaaggaaa ttctccagatn acacacttne caaactctcc ct.kgackkrg 300
gggggccccg auaagccaaa ctgamcataa raaaatwa cctgggtgag arttgcataa 360
acagaantwr ggtagtatac tgaatnucag catcattaaa rmgttwtktt wtt.ctccctt 420
gcacaaaaea tgaacngact tcccgctgag taatgccuag ttgtcttctt tatnataaaa 480
cttgcccttc attacatggt tnaaagtgt gtggtgggnc aaaaatattga aatgatggaa 540
ctgactgala aaqutgtaca aataagcagt gtgcctaaac agcaacacag taatgttgac 600
atgcttaatt cacaaatgct aallctcatta caaatgttg ctcaaatara ctctgaaacta 660
ttttctctgt ttccagagc cgagatntta gcttttatgt agtatnaagt gaanaantac 720
gaanataata acattgaaga aaaaananaa aanaaaaaa a 761

```

<210> 189

<211> 482

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(482)

<223> n = A,T,C or G

<400> 189

```

tttttttttt ttgtccgatn ctactatttt attgcaggan gtgggggtgt atgacccgca 60
caccgggggt atnagaagca agaagggaagg agggaggggca cagccccctg ctgagcaaca 120
aagccgcttg ctgcttctc tgtctgtctc ctgggtcagg cactgggga gaccttccc 180
aaggcagggg ccccccgttc aggggtggga atcaggggg tgggagtggt quataagaag 240
tgaatgggca aggccaccg gtacagagcc ctgggtcctt gacaggtnga ttccgacag 300
gtcattgtgc cctgccaggg caccagctan atctggaaac gacagaatgc ttcccttttc 360
aatcttggtt ngctatngaa ngggcatttt tccaaattng gctnggtctt ggtacncttg 420
gttcggccca gctcncgtc caaaaantat tcacccnact ccaatttgt tgcngnccc 480
cc

```

<210> 190

<211> 471

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(471)

<223> n = A,T,C or G

<400> 190

```

tttttttttt ttttaaaac gtttttcaca acaaaattta ttagaagaat agtggttttg 60
aaaactcttg cctccagtga gaactacat acaccacatt acagctngga atgtncctca 120
aatgtctggt caaatgatca aatggaaaca ttcaattctta cacatgcacg aagaacaag 180
cgtttttgac atacaatgc caaaaaaaa aggggggggg gacnccatgg attaaaattt 240
taagtactca tccatacat taagacacag ttctagtcca gtcnaaaatc agaactgcnt 300
tgaaaaattt catgtatgca atccaaacca agaacttnt ttggtgatcat gantnctcta 360
ctacatcnaa cttgatcatt gccaggaacn aaagcttna encacnccgt acaaaaadaa 420
tctgtaattt anttcnaact ccgtacngaa aeatntntnt tacaactcc c 471

```

<210> 191

<211> 402

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (402)

<223> n = A,T,C or G

<400> 191

gagggtattga	agggtctgttc	tactgtcggm	ctgttcagcc	accaactcta	acaagttgct	60
gtcttccact	cactgtctgt	aagcttttta	ccccagacwg	tatcttcata	aatagaccaa	120
attcttcacc	agtcacatct	tctaggacct	ttttggatto	agttagtatu	agctcttccc	180
cttccttctg	taagacttca	tctggtaagg	tcttaagttt	tgtaggaagg	aattyaattg	240
ctcgtttctc	aacaatgtcc	tctccttgaa	gtatttgagc	gaacacccc	cctaaagtcc	300
ctttgtgcat	ccatttttaa	tatacttaat	agggcattgk	tncaactagg	tcaattctgc	360
aagggtcctc	tgtctgcaaa	agttgcttta	gtatctctgc	ca		402

<210> 192

<211> 601

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (601)

<223> n = A,T,C or G

<400> 192

gagctcgggt	ccaatatct	ttgtctgagg	gcagcacaca	tatncagtg	cattggaact	60
ggtctacccc	acatgggagg	agcatgcrct	agntatataa	ggtcattucc	tgagccagac	120
atgcyctttt	gagtacccgt	tgcraagtg	tggtgattcl	yaacacacyt	ccatcccggt	180
cttttctgga	aaaactggca	cttktctgga	actagcarga	catcacttac	aaattcacc	240
acgagacact	tgaagggtgt	aacaaagcga	ytcttgcatt	gctttttgtc	cttcgggcac	300
cagttgtcaa	tactaacrcg	ctggtttgrr	tccatccaat	ttgtgatctg	tagctctgga	360
tacatctcct	gacagtactg	aagaacttct	tctttctgtt	caaaagcacc	tcttggtgcc	420
tgtcggatca	ggttcccatc	tccagctcyg	aatgttcaca	tggcatattt	waattccca	480
aaaacattgc	gattttaggc	tcagcaacag	caaatctctg	tccggcattg	gctgcaagag	540
cctcgatgta	gcccggccagc	gccaaaggcag	gcgcggtgag	ccccaccagc	agcagaagca	600
g						601

<210> 193

<211> 608

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (608)

<223> n = A,T,C or G

<400> 193

atccagccca	natccacca	cgaagatgag	cttgttgact	gagaacctga	tgcggctcact	60
ggtcccgctg	tagcccccag	gactctccac	ctgctggaag	cggttgatgc	tgcactcytt	120
cccaacgcag	gcagmagcgg	gscgggtcaa	tgaactccay	tctgsgcttg	gggtkgacgg	180
tkaagtgcag	gaagaggtct	accacctcgc	ggttccaccag	gatgcccag	tgtgaggagac	240
ctgcagcga	ctctctcgat	ggtcattgag	gggaagcga	tgaggcccag	ggccttgccc	300


```

agaaccttcc gectgttctc tgggttcacc tgcagctgct gccgctgaca ctccguctcg      360
gaccagcgga caaacgggct tgaacagrcg ccctctcccg atgcccagtg tctcgcgctc      420
caggammjac accagcgtgt ccaggtcaat gtccgtgaag ccctcccgcg gtralcgctg      480
ctgcagctgt tttgtcgatg ttctccaggc acagccttgc cagctgcggc tcctcgaaga      540
gtccgcgctg cgtgagcagc atgaaggcgt tgcgcgctcg cagttctctt tcaggaaatc      600
cacgcaat.                                     608

```

```

<210> 194
<211> 392
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (392)
<223> n = A,T,C or G

```

```

<400> 194
gaaacggctgg accttgcttc gcaattgtgt tgcctggcagg gaataccttg gcaagcagyt      60
cragtccgag cagcccaga ccgctgcgcg cngaaactaa gcttgctctt ggccttcccn      120
tccgctcaca tgcagaacca gtatggggag cactgtgttt agagltcaga gtgaaccactg      180
tttgatttta cttgggaatt tctctgttta tatagctttt cccaatgcta atttccaaac      240
aaccaacca aactaacatg tttgctgttt aagttgtata aaagttagtg attctgtatt      300
taaaagaaant attactgtta catatactgc ttgcaatttc tctatttatt gkctctatgg      360
aaataaatat agttatttaa ggttgctcan. cc      392

```

```

<210> 195
<211> 502
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (502)
<223> n = A,T,C or G

```

```

<400> 195
ccattkgagg ggtkaggkyc cagttycggc atggaagaaa caggccaggc gaagtgcgctg      60
ccgagctgag gcagatgttc ccacagtgac cccragagcc styggatata gtytctgacc      120
cctcncaagg aaagaccaca ttctggggac atgggctgga gggcaggacc tagaggcacc      180
aagggaaggc cccattccgg ggtgtgtccc cgaggaggga ggyaaggggc tctgtgtgcc      240
cccnagggg aagugggcct gagtccctgg atcagacacc ccttcccgty tctccnaca      300
cnaatgcaag ctncaccaag tccccctca gtcccccttc atacacctg amcyggcact      360
gscscacacc cccccagagc acgccacccg ccatggggar tctgctcaag gartcgcnag      420
gcarcgtgga catctgtcc cagaaggggg cagaalctcc aatagangga ctgarcmett      480
gctnanaaaa aaaaanaaaa aa      502

```

```

<210> 196
<211> 665
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (665)

```

<223> n = A,T,C or G

<400> 196

gggtacttgg	tctcattgcc	accacttagt	ggatgkcat	tagaaccatt	ctgtctgctc	60
ccctctggaag	ccttgccag	agcggacttt	gtanttgctg	gaggaataact	gctgaabctt	120
wagctgtttk	gagttgattg	gcaccactgc	anccacacac	tcaatatgaa	aacyawttga	180
actwatttat	tatcttgtga	aaagtatlaac	aatgaaaath	tlgttcatac	tgtatrkate	240
aagtatgatg	aaaagcaawa	gatatatatt	cttttattat	gtttaaattat	gattgccatt	300
actaatcggc	aaaatgtgga	gtgfatgttc	ttttcacagt	aalatatgcc	ttttgtacat	360
tactttggtt	attttatctg	aaatgattta	caaaabcttt	aatttaagar	aatggatgtg	420
watatatttt	tcattaaatt	ctttcctkgt	ttacgtwaat	tttgaanaaga	wtgcatgatt	480
tcttgacaga	aatcgatctt	gatgctgtgg	aagtagtttg	acccacatcc	ctatgagttt	540
ttcttagant	gtataaaggt	tgtagcccat	ctnaacttcaa	agaaaanaaat	gacracatac	600
tttgcaatca	ggctgaablg	tggcatgctn	tctcatttcc	aactttataa	actagcaaan	660
aagtg						665

<210> 197

<211> 492

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (492)

<223> n = A,T,C or G

<400> 197

ttttntttct	ttttttttgc	aggaaggatc	ccattttattg	tggatggcat	ttcacaatat	60
atgtttattg	gagcgatcca	ttatcagtga	aaagtatcca	gtgtttataa	natttttagg	120
aaggragatt	ccagaaacat	gctngtengc	ttgcatgttt	acctcgtana	gatnacagag	180
aattatagtc	naaccagtaa	acneggant	tacttttcaa	agagttlaat	ccaaactgaa	240
caaaattcta	ccctgaaact	tactccatcc	aaatatttga	ataanagtc	gcagtgatag	300
atctctttct	gaactttaga	ttttctagaa	aaatatgtaa	taqtgatcag	gaagagctct	360
tgttcaaaag	tacaacnaag	caatgtttcc	ttaccatagg	cccttaattcc	aattttgate	420
caatttcaut	ccatcacggg	agtcactgct	acctgggaca	cttgtatttt	gttcatnctg	480
ancttggttt	aa					492

<210> 198

<211> 478

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (478)

<223> n = A,T,C or G

<400> 198

tttnktttgn	atttcantct	gtannaanta	ttttcattat	gttclattana	aaaatatnaa	60
tgtntccacn	acaaatcatn	ttactnagc	aagagggccan	ctacattgta	caacatarac	120
tgagtatatt	ttgaaaagga	caagtittaa	gtanacnaat	attgucganc	atanacacatt	180
tatacatggc	ttgattgata	tttagcacag	caaaaactga	gtgagttacc	agaaanaaat	240
natalatgcu	aatcngattt	aagetacana	acagatccta	tggtacatan	catctgtag	300
gagttgtggc	tttatgctta	ctgaaagtr	atgagtttcc	tgtacaaaga	gatyggcgta	360
agcattctat	tacctctact	ccatgggtta	gattcgtaga	cttatgttta	catatgtncn	420

gggttagaat tgtgtttagt naatttatgg agaggttcan gagaaaaatt tgatncaa 478

<210> 199
 <211> 482
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> {1}...{482}
 <223> n = A,T,C or G

<400> 199
 agtgaattgt cctccaaaca aaccccttga tcaagtttgt ggaactgaca atcagaccta 60
 tgcctagttcc tgcctctctc tgcctactaa atgcagactg gaggggacca azaaggggca 120
 tcaactccag ctggtattat ttggagcctg caaatctatt cctacttgta cggactttga 180
 agtgaattcag ttccctctac ggaatgagaga ctgggtccag aatatctca tgcagcttte 240
 tgaagccnac tctgaacacg ctggttatct nagaatgagaa ncagagaaat aaagtcnaga 300
 aatattaccc ggaggaagaag aggaatttngg ctggggacaa tcccatcgaa ccttctctca 360
 onggacttta agaanauact accacatgtt tgaatgater tggcagcngg ccgtcttantg 420
 aactnngacn ncarccctnt ggaatanant cttagcngcn tccatgaactt gctcctctgc 480
 ga 482

<210> 200
 <211> 270
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> {1}...{270}
 <223> n = A,T,C or G

<400> 200
 cggccgcgaag tgaactcca gctggggccg tggggacgaa gattctggca gcagttgggtc 60
 cgactggcgc gacggcgccg ggcacagtcc caggtgcagc gcygggcctt ggggtctctgc 120
 agggctgagc tgaagccgca gaggctcgtg cagcgcacac gacctgacg ccgtcggggc 180
 cagccgggac agagcccggt gaagccggga ggcctcgggg agccctcggg gaagggcgcc 240
 ccgagagata cgcaggtgca ggtggccgcc 270

<210> 201
 <211> 419
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> {1}...{419}
 <223> n = A,T,C or G

<400> 201
 tttttttt ttttggatc tactgcaagc acagcaggtc agcaacaagt tlattttgca 60
 gctagcaagg taacagggta gggcatggtt acatgttcag gtcaccttcc tttgtcgtgg 120
 ttgattgggt tgtctttatg ggggcggggt ggggtagggg aacncgaagc anaantaaca 180
 tggagtggtt gcaacccccc tttagaacct ggttacnaaa gcttggggca gttcacctgg 240

```
<210> 202
<211> 509
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(509)
<223> n = A,T,C or G
```

400 202

tttntttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tggcacttaa	tccatttttt	tttcaaaatg	tctacaaant	tttactnenc	cattatacng	120
gtatatttnc	aaaatctaaa	nttatttcza	atntnagcca	aatctcttac	ncaattnaa	180
tacnnczaa	aaLcaaaat	ataentntct	ttcaycaaac	ttngtLacat	aatctaaa	240
aalatatacg	gctgggtgtt	tcaaaagtaca	attatcttaa	cactgcaaac	aatcttnaa	300
ggaactaaaa	caaaaaaaa	cactnccgca	aaagttaazg	ggaacaaaca	attcttttt	360
caacancnnc	nattataaaa	atcabatctc	aatctcttagg	ggaatatata	cttcaacacng	420
ggatcttaac	ttttactnca	cttggtttat	ttttttanaa	ccattgtntt	ggtcccaaca	480
caatggnaat	ncnncnenc	tggactagt				509

```
<210> 203
<211> 583
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> {1}... (583)
<223> n = A, T, C or G
```

<400> 203

tttttttttt	ttttttttga	ccccctctt	atonnaaaca	agttaacatt	ttatttttaut	60
tacacatatt	tattttctaa	ttggtattag	atatc:aaaa	ggcagctttt	aaatcaaac	120
taaatggaaa	ctgccttaga	tacatattct	ctaggaatta	gtttaaatac	tgcctaaagt	180
gaaatctct	tctagctctt	ttgactgtaa	attttctgact	cttgtaaaac	atccaaattc	240
atttttcttg	tctttaaatt	tatctaattt	ctccattttt	ctccatttcc	aagtcaattt	300
gcttctctag	cttcatttcc	tagctcttat	ctactattag	taagtggctt	tattctaaa	360
agggaaaaaa	ggagagana	atggcacaac	aaacaaacat	ttctatttca	tattctctacc	420
tacgttaata	aaataycatt	ttgtgaagrc	agctcaaaag	aaggcttaga	tcttttctg	480
tccatttttag	tactaaacg	atatcnaag	tgcagaaatg	cnaagggtt	gtgaacattt	540
attcaaaagc	taataaaga	tatttcacat	atcattttt	ctg		583

```
<210> 204
<211> 589
<212> DNA
<213> Homo sapien
```

```
<220>  
<221> misc_feature  
<222> (1) ... (589)
```

<223> n = A,T,C or G

<400> 204

tttttttttt	tttttttttt	tttttttttt	tttttttttt	ttganaatga	ggatcgagtt	60
tttcaactctc	cagatagggc	atgaagaggg	ctcacttttc	cagctctaaa	ataacgactca	120
aattctcttat	gctatatacct	atttttaagtt	aaactaattga	gtcactgggt	tatctttctcc	180
tgaagggagtt	ctgttcattc	ttctcattca	tatagttata	tcaagttacta	ccttgcctat	240
tgagaggttt	ttcttctctca	tttccacata	tatttccatg	tgaatttcta	tcaaaccttt	300
attttctatgc	aaactagaaa	ataatgtttt	cttttgcata	agaggaagaga	acaatatnag	360
cattacaaaa	ctgctcagac	tgtttgttaa	gnttatccat	tataattagt	lnggcaggag	420
ctaatacaaa	tacattttac	ngacnagcaa	tataaaaact	gaagtaacag	ttaaatatcc	480
aaataatta	aagggaacat	tttagcctgg	gtataattay	ctaatttcaat	tcaagagcat	540
ttattnagaa	tyaattcaca	tgttatttct	ccttagccca	acacaaatgg		589

<210> 205

<211> 545

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(545)

<223> n = A,T,C or G

<400> 205

tttttttttt	tttttttttt	aataatcaga	acaatattta	tttttatatt	taaaattccl	60
agaaaagtgc	cttacaattta	ataaaggttt	gtttctcaga	gctatcagag	gaattagata	120
tngtcttgaa	caccaattatt	aatttgaggga	aaataaccca	aaatacctta	agtaaatatt	180
tttaagatcat	agagcttcta	agtgaagaga	taaaatttga	cctcagaaac	tctgaagcatt	240
aaaaatccac	tattagcaca	tcaattarta	tggacttctt	gctttaatttt	tgtgatgaat	300
atggggtgtc	actggtaaac	caacacattc	tgaaggatac	atttaattagt	gatagattct	360
tatgtacttt	gctanattac	gtggatatga	gttgacaaagt	ttctctttct	tcaatctttt	420
aaggggcngg	ngaattgagg	aagaaagaga	aaggattacg	catatgttct	tttctatngg	480
aaggattaga	tatgtttctt	ttgccaatat	taaaaaata	ataatgttta	ctactagtga	540
aaccc						545

<210> 206

<211> 487

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(487)

<223> n = A,T,C or G

<400> 206

tttttttttt	tttttttagtc	aagtctctna	tttttattat	aattcaagtc	tgggtcattt	60
catttatttag	ctctycaact	tacatattta	aattaaagaa	acgttnttct	acaactgtta	120
caattttata	atgtaagggtg	caattattga	gtanatttat	tctccaaga	gtggatgtgt	180
cctttctccc	accaactaat	gaancagcaa	cattagttta	atlttattag	tagatnatcc	240
actgctgcaa	acgttaattc	tcttctccat	ccccatgtng	ataattgtgt	latgtgtgag	300
ttggtnagaa	tgcatconca	atctnacaut	caacagcaag	atgaagctag	gcntgggctt	360
tgggtgaaaa	tagactgtgt	ctgtctgaat	caaalautct	gacctatnct	cggtggaag	420
aactctctga	ccctcttctt	caaaggcngc	tgcacatttt	gtggcctctn	ttgcacttga	480

ttcaaaa

487

<210> 207
 <211> 332
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(332)
 <223> n = A,T,C or G

<400> 207

tgaattggct	aaaagaatgc	atcttttanaa	cuaggcaactc	ttatttctt	ccttttaaaa	60
vacataagat	ttaattcccaa	atcctattta	aagacctgac	agcttgagaa	ggfcaactact	120
gcatttatag	gaccttctg	tggttctgct	gltacntttg	aantctgaca	atccttgana	180
atcctttgcat	gcagaggagg	taaaaggcat	tggattttca	agagggaana	acacagcgca	240
gaaatgaagg	ggccagggtt	actgagcttg	tccactggag	ggctcatggg	tgggacatgg	300
aaaagaaggc	agcctaggcc	ctggggaggcc	ca			332

<210> 208
 <211> 524
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(524)
 <223> n = A,T,C or G

<400> 208

agggcgtggt	gcaggaggcg	ttactgtttt	gtctcagtaa	caataaatac	aaaaagactg	60
gltgtgttcc	ggccccatcc	aaccacgaag	ttgatttctc	ttgtgtgcag	agtgaactgat	120
tttaaggac	atggagcttg	tcacaatgtc	acaatgtcac	agtgtggaag	gcacactcac	180
tcccagctga	ttcacattta	gcaavcaca	atagctcatg	agtcataact	tgtaaatact	240
tttggcagaa	tactttttga	aacttgacga	tgataactaa	gacccaagat	atttcccaa	300
gtaaatagaa	gtgggtcata	atatttaata	cctgttcaca	tatgtttcca	tttaacagtc	360
atgagccccag	acactgacat	caaaactaagc	ccacttagar	tcttcaccac	cagtctgtcc	420
tgtcatcaga	caggaggctg	tcaccttgac	caaattctca	ccagtcaatc	atctatccaa	480
aaaccattac	ctgatccact	tcrggtaatg	caccaccttg	gtga		524

<210> 209
 <211> 159
 <212> DNA
 <213> Homo sapien

<400> 209

gggtgaggaa	atccagggtt	ggcatggaga	aaattccagt	gtcagcattc	tlgctccttg	60
tggcctctc	ctacactctg	ggcagagata	ccacagtcac	acutggagcc	aaaaaggaca	120
caaaggactc	tgcacccaaa	ctgccccaga	ccccctcua			159

<210> 210
 <211> 256
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1) ... (256)
 <223> n = A, T, C or G

<400> 210
 actccctggc agacaaagga agaggagaga gctctgttctg ttctgtgttg ttgaactgcc 60
 actgaatttc ttccacttg gactattaca tggcatttga gggactaatg gaaaaaccta 120
 tggggagatt ttanccaatt tangtntgtt aatggggaga ctggggcagg cggggagagat 180
 ttgcaggggtg naaatgggan ggctgggtttt ttanattgaac agggacuatg gaggtgggca 240
 ccaggatgct aaatca 256

<210> 211
 <211> 264
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1) ... (264)
 <223> n = A, T, C or G

<400> 211
 acattgtttt tttagatat agcattgaga gagctctctt taactgtacc caatggaagg 60
 actggaacac ataccacat ctttgtcttg agggataatt ttctgatatg gtcttgctgt 120
 atattcaagc acatctgtta tatattattc agtctcctgt ttatagccta gtttagggaga 180
 gggggagata attongaaag aggaactgaa gaaatattca agtngggaaa cagaaaaaga 240
 aaaaaaggag caaatggaga gcct 264

<210> 212
 <211> 328
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1) ... (328)
 <223> n = A, T, C or G

<400> 212
 acccaaaaat ccatgtctga atatttggct tcattatttc canattcttt gattgtcaaa 60
 ggaatttaag ttgtctcagc ttggyoactt cagttaggac ctaaggatgc cagctggcag 120
 gtttatctat gcagcaacaa tattcaagcg cgacaacagg ttattggaat tggccgctcg 180
 ttnaatttca ttcctattga ctggggatcc ttatcatcag ccagagagat tgaattttta 240
 cccctacnac tctttactct ctgganaggy ccagtggctg taqctataag cttggccaca 300
 ttttttttct ctttatttct ttgtcaga 328

<210> 213
 <211> 250
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature

<222> {1}... (250)
 <223> n = A,T,C or G

<400> 213

aattatgagc agagcgacat atccnagtgt agactgaata aaactgaatt ctctccagtt	60
taaagcattg ctcaactgag ggatagaagt gactgccagg agggaaagta agccaaaggct	120
cattatgccn aagganatat acatttcaat tctccaaact tcttctcat tccaagagtt	180
ttcaatattt gcctgaacct gctgataaag catgttaana aacaaatata tctctnaact	240
tctcatcggt	250

<210> 214
 <211> 444
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}... (444)
 <223> n = A,T,C or G

<400> 214

accagagatc caatgctgaa tatttggttt cattattccc agatcctttg attgtcaaag	60
gatttaattg tctctcagct tgggcacttc agttaggacc taaggatgcc agcuggcagg	120
tttatatag cagcaacaa. attcaagcgc gacaaacagg tattggaact gccgcaggt	180
tgaatttcac tccacttgac ttgggtctct tatcatcagc canagagatt gaaaatttac	240
ccctadgaat cttactctc tggagagggc caatggttgt agctataagc ttggccacat	300
ttttttttcc ttctattcct tgcagagat gcgattcacc calatgctan aaaccaacag	360
agtgaatttt acaaaattcc tataganatt gtgaataaaa ccttacctat agttgccatt	420
actttgctct ccctaatata cctc	444

<210> 215
 <211> 366
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}... (366)
 <223> n = A,T,C or G

<400> 215

acttatgggc agagcgacat atccaaagtgt aaactgaata aaactgaatt ctctccagtt	60
taaagcattg ctcaactgag ggatagaagt gactgccagg agggaaagta agcnaaggct	120
cattatgccn aagganatat acatttcaat tctccaaact tcttctcat tccaagagtt	180
ttcaatattt gcctgaacct gctgataaag catgttgaga aacaaatata tctctgaact	240
tctcatcggt aagcagagggc tctaggcaac atgggaacct gcgaanaaaa aacttagtaa	300
tccaagctgt tttctacact gtaacctagg ttccaaccac gctggaaata tctataactt	360
ggtgcc	366

<210> 216
 <211> 260
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature
 <222> (1) ... (260)
 <223> n = A,T,C or G

<400> 216
 ctgtataaac agaaatccac tgcangaggg agggccgggc caggagaatc tccgttgtc 60
 cagacaggg gcttaaggag ggtctccaca ctgctnntaa gggctnttnc atttttttat 120
 taataaaag tnnaduaagg ctcttctcaa ctcttttccc tctggctgga aaatttaaaa 180
 atcaaaatt tcttnaagtt ntcagctat catatatact ntatcctgaa aaagcaaat 240
 aattcttcc tccctccctt 260

<210> 217
 <211> 262
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (262)
 <223> n = A,T,C or G

<400> 217
 acctacgtgg gtaagtttan aaatggtata atttcaggaa naggaaagca tataattgta 60
 tottgcctat aattttctat tttaataagg aaatagcaaa ttggggtggg gggaaatgtag 120
 ggcattctac agtttyagca aaatgcaatt aaatgtggaa ggacagcact gaaaaatttt 180
 atgaataato tgtatgatta tctgtctcta gagtagattt atatttagcc acttccccca 240
 atatccttca tgcctgtaaa gt 262

<210> 218
 <211> 205
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (205)
 <223> n = A,T,C or G

<400> 218
 accaagggtgg tgcattaccg gaantggatc aagacarca tngtggcuaa cccctgagca 60
 cccctatcaa ctcccttttg tagtaaatc ggaccttgg aaatgaccag gccaaagatc 120
 aggcctcccc agttctactg acctttgtcc ctangtntna ngtcaggggt tgcaggaaa 180
 anaaatcagc agacacagggt gtaa 205

<210> 219
 <211> 114
 <212> DNA
 <213> Homo sapien

<400> 219
 cacctgttttg tctcagtaac aatcaataca aaaagartgg ttgtgttccg gccccatcca 60
 accacgaagt cgattttctt tgtgtgcaga gtgactgatt ttaagggaca tgga 114

<210> 220
 <211> 93

<212> DNA

<213> Homo sapien

<400> 220

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actagccagc accaaaagga gggtagcctg aattgcttcc tgcctcttlaa atttctcttca 60
aantaagcat ttagtgtctc gtcctactg agt 93
```

<210> 221

<211> 167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{167}

<223> n = A,T,C or G

<400> 221

```
actangtgca ggtgcgcaca atattttgtc gatattccct tcatcttggc tcccatgagg 60
tcttttgcgc agcctgtggc tctactgtag taagtctctg ctgatgagga gccagnatgc 120
ccccactac ctccctgac gctcccccna aatcacccaa cctctgt 167
```

<210> 222

<211> 351

<212> DNA

<213> Homo sapien

<400> 222

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agggcctggt gcggaggggcg gtactgacct cattagtagg aggatgcatt ctggcaccgc 60
gttcttcacc tgtcccccaa tccctaaaag gccatcttgc ataaagtcaa caacagataa 120
atgtttgctg atttaaagga tggatgaaaa aaattzataa tgaatttttg cataatccaa 180
ttttctcttt tatatttcta gaagaagttt ctttgagcct attagatccc ggggaatctt 240
taggtgagca tgattagaga gcttgtaggt tgcctttaca tatatctggc atatttgagt 300
ctcgtatcna aacaatagat tggtaaaagt ggtattattc cattgataag t 351
```

<210> 223

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{383}

<223> n = A,T,C or G

<400> 223

```
aaacacacaa aacaaaaaaa accattcttc attcagaaaa attatctttag ggactgatat 60
tggtaattat ggtcaattta atwrtttkt ggggcatttc cttaacattgt cttgacaaga 120
ttaaatgtc tglgcacaaa ttttgtatte tatltggaga ctctctatca aaagtaatgc 180
tgccaaagga agtctaagga attagtatgt tcccmccac ttgtttggag tgtgctatc 240
taaaagattt tgatttctg gaatgacac tatattttaa ctttggtggg ggaanagtt 300
ataggaccac agtcttcact tctgatactt gtaaatteat cttttattgc atttattttg 360
accatttaagc tatatgttca aaa 383
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<210> 224

<211> 320
 <212> DNA
 <213> Homo sapien

<400> 224

ccccctgaagg	cttcttggta	gaaatagta	cagttacac	caatagggaac	acaaaaaga	60
aaaagtttgt	gacatgtat	tagggagtgt	gtacccctta	ctccccatca	aaaaaaat	120
ggatucattg	ttaaaggata	raagggaat	atcttatcat	atgtttctaaa	agagaggaa	180
gagaaaatc	tactttctc	aatgggaag	ccctaaaggt	gctttgatcc	tgaaggccc	240
aaatgtggcc	gtccatccct	ctttacagt	gcattgattc	gacacggtaa	ctgttgcat	300
tttaractcm	gcattgtgac					320

<210> 225
 <211> 1214
 <212> DNA
 <213> Homo sapien

<400> 225

gaggactgca	gccccgactc	gaagccctgg	caggcgagac	tggatctgga	aaacgaattg	60
ttctgtctgg	gggtccctgg	gcataccgac	tgggtgctgt	caagccgcaca	ctgtttccag	120
aaactccata	ccatcgggct	gggctctgac	agtcctgag	ccgaccaaga	gcccaggagc	180
cagatggfgg	agggcagcc	ctcgtacgg	caacccagag	acaaacagac	cttgcctcgt	240
aaagacccca	tgtccatcaa	gttggagcga	tccgtgtcc	agtctgacac	ctatccggagc	300
atragcattg	cttcgagatg	ccctaccgng	gggaactctt	gcctcgttcc	tggctggggt	360
ctgctggcga	acggcagaa	gcctaccgtg	ctgcagtgcg	tgaacgtgtc	ggctgggtgt	420
gaggaggtct	gcagttaagc	ctatgacccg	ctgtacccac	ccagcatgtt	ctgcgcgggc	480
ggagggcaag	acagaaagga	ctccgcaac	ggtgactctg	gggggcccc	gattctgcaac	540
gggtacttgc	agggccttgc	gtctttcggg	aaagccccgt	gtggcraagl	tggcgtgcca	600
gggtgtctca	ccaaacctct	caaattcccl	gagtgatag	agaaacucgt	ccaggccagt	660
tactctctgg	gactgggaac	ccatgaatt	gaccccaaa	tacatctctg	gggaaggaa	720
caggaatatc	tgtttccagc	ccctccctcc	tccggccag	gagtcacggc	ccccagcccc	780
tcctccctca	aaaccaagggt	acagatcccc	agccctccct	ccctcagacc	caggagtcra	840
gacccccag	ccctccctcc	ctcagaccca	ggagtcacag	ccctccctcc	tcagacccag	900
gagtcacagc	ccccagccc	ctccctccct	agacccaggg	gtccaggccc	ccaaacccct	960
ctccctcaga	ctcagaggtc	caagccccca	acccctccct	ccctcagccc	agaggtccag	1020
gtccagagcc	ctcctccctc	agacccagcg	gtccaatgnc	acctagactc	tccctgtaca	1080
cagtgccccc	ttgtggcag	ctgacccaac	cttaacagtt	gggtttctct	tttttgtccc	1140
tttccctcag	atccagaaat	aaagtcctag	agaagcgcac	aaaaaanaaa	aaaaaanaaa	1200
aaaaaanaaa	aaaaaanaaa					1214

<210> 226
 <211> 119
 <212> DNA
 <213> Homo sapien

<400> 226

acccagtatg	tgcaggagga	cggaacccca	tgtgacagcc	actccaccca	gggttcccaa	60
agaacctggc	ccagtcatca	tcattcatcc	tgaagtgagg	aalaatcarg	ataaccagt	119

<210> 227
 <211> 818
 <212> DNA
 <213> Homo sapien

<400> 227

acaattcata	gggacgacca	atgaggacag	ggatgaacc	cggctctccc	ccagccctga	60
tttttctac	atatgggylc	ctttttcatt	ctttgcacaa	acactggggt	ttctgagaac	120
acggagggll	cttagcaca	tttgtgaaat	ctgtgtaraa	ccgggctttg	caggggaggt	180
aattttctc	ctctggagga	aaggtggtga	ttgaraggca	gggagacagt	gacaaaggcta	240
gagaaagccc	cgtctggcct	tctctgaaac	aggttggaac	ggcagacccc	tgaaaacgaa	300
gcttgtcccc	ttccaatcag	ccacttctga	gaacccccat	ctaaatttct	actggaaaag	360
agggcctcct	caggagcagt	ccaagagbtt	tcnaagataa	cgtgacacut	arcatctaga	420
ggaaagggtg	caacctcagc	ayagzagccg	agagctlaau	tctggtcgtt	tcuagagaca	480
acctgctggc	tgtcttggga	tgcgctcagc	ctttgagagg	ccactacccc	atgaacttct	540
gcctccact	ggacatgaag	ctgaggacac	tgggcttcaa	cactgagttg	tcattgagagg	600
gacaggctct	gcccotcaagc	cggctgaggg	cagcaaccac	tctcctcccc	tttctcagcg	660
aaagccattc	ccacaaatcc	agaccatacc	atgaagcaac	gagaccraaa	cagtttggct	720
caagaggata	tgaggactgt	ctcagcctgg	ctttgggctg	acacuatgca	cacacaaag	780
gtccacttct	aggttctcag	cttagatggg	agtctgat			818

<210> 228

<211> 744

<212> DNA

<213> Homo sapien

<400> 228

actggagaca	ctgttgaact	tgatcaagac	ccagaccacc	ccaggtctcc	ttcgtgggat	60
gtcatgacgt	ttgacalacc	tttggaaacga	gcctcctcct	tggaagatgg	agaccgtgt	120
tcgtggccga	cctggcctct	cctggcctgt	ctcttaagat	gaggagtcc	atttcaatgg	180
taggaaaggt	ggcttngtaa	aatagaagag	cagtcactgt	ggaactacca	aatggcgaga	240
tgctcgggtg	acattggggg	gcttgggggt	aaaagattta	tgagcraact	attctctggc	300
acccagattct	aggccagttt	gttccactga	agcttctccc	acagcagtrc	acctctgcag	360
gtcggcagct	gaatgggttg	ccgggtggctc	tgtggcaaga	tcacactgag	atcgatgggt	420
gagaagagct	ggatgcttgt	ctagtgttct	tagctgtcac	gttggctcct	tcacaggttg	480
ccagacgggtg	ttggccactc	ccttctaaaa	ccaggygcgc	ctcctgggtga	cagtgarccg	540
ccgtgggtatg	ccttggccca	ttccagcagc	ccagttatg	ccttcaagc	ttgggggttg	600
ttcttttctg	taatgttctc	ctgtgttgtc	agctgtcttc	atttccctgg	ctaaagcagc	660
ttgggagatg	tygaccagag	atccactcct	taagaaccag	tggcyaaaga	cactttcttt	720
cttccactctg	aagtagctgg	tggc				744

<210> 229

<211> 300

<212> DNA

<213> Homo sapien

<400> 229

cgagtctggg	ttttgtctat	aaagtttgat	ccctcctttt	ctcatccaaa	tcattgtgaac	60
cattacacat	cgaataaaa	gaaaggtggc	agacttggcc	aaagccaggc	tgacatgtgc	120
tgcagggttg	ttgtttttta	attattatlg	ttagaacagt	caacccacagt	ccctgttaat	180
ttgtatgtga	cagccaactc	tgaagaggtc	ctatttttcc	acctgcagag	gatccagtct	240
cactaggctc	ctccttggcc	tcacactgga	gtctccgcna	gtgtgggtgc	ccactgacat	300

<210> 230

<211> 301

<212> DNA

<213> Homo sapien

<400> 230

cagcagaaca	aatacgaata	tgaagagtgc	aaagatutca	taaaatctat	actgagggaat	60
gagcgacagt	tcaggaggga	gaagcttgc	gggcagctca	agcaagctga	ggagctcagg	120

caatataaag	tccctgggttca	cactcaggga	cagagagctga	cccaggttaag	ggagaaggttg	180
cggaagggga	gagatgccctc	cctctcattg	aatgagcatc	lccagggccct	cctcactccg	240
gntgaaucgg	acaaagtcaca	ggggcaggac	clccaaagaa	cagacctcgg	ccguyaccac	300
g						301

<210> 231

<211> 301

<212> DNA

<213> Homo sapien

<400> 231

gcaagcagcg	lggcaaatct	ctgtcaggtc	agctccagag	aagccatttag	tcatttlaqc	60
caggaactuu	aagtcacacat	ccttggcaac	tgaggacttg	cgcagggttag	ccttgaggat	120
ggcaacacgg	gacttctcat	caggaagtgg	gatgtagatg	agutgatcaa	gacggccuag	180
tctgaggatg	guaggatcaa	tgatgtcagg	ccggcttggt	ccgccaatga	tgaaacacatt	240
ttttcttctg	gacatgccat	ccatttctgt	caggatctgg	ttgatgactc	ggtcagcagc	300
c						301

<210> 232

<211> 301

<212> DNA

<213> Homo sapien

<400> 232

agtaggtatt	tccgtgagaag	ttcaacacca	aaactggaac	atagttctcc	ttcaagtgtt	60
ggcgaacagc	gggttccctg	attctggaat	ataactttgt	gtaaattaac	agccacctat	120
agaagagtc	atctgctgtg	aaggagagac	agagaactct	gggttccgtc	gtcctgtccc	180
cgtgctgtac	caagtgtctg	tgccagcctg	ttacctgttc	ccactgaaaa	tctggctaat	240
gctcttctgt	atcatttctg	attctgacaa	tcaatcaatc	aatggcctag	agcactgact	300
g						301

<210> 233

<211> 301

<212> DNA

<213> Homo sapien

<400> 233

atgactgact	tcccaglaag	gctctctaa	gggtaaagt	gaggatccac	aggatttga	60
atgctaagyo	cccagagatc	gtttgatcca	acccctctat	tttcagaggg	gaaatcggg	120
crtagaagtl	acagagcatc	tagctggtgc	gctggcacc	ctggcctcac	acagactccc	180
gagtagctgg	gactacaggc	acacagtcac	tyaagcaggc	cctgttagca	attctatgcg	240
tacaattta	cctgagatga	gtagagactt	tattgagaaa	gcaagagaaa	atcctatcaa	300
c						301

<210> 234

<211> 301

<212> DNA

<213> Homo sapien

<400> 234

aggtccataa	cctcagagct	cateratgat	tgatatgaat	ttaaaaatla	caagcaanga	60
cattttattc	atcatgatgc	tttcttttgt	ttcttctttt	cgtttttctt	ttttctcttt	120
tcattttcay	caacataactt	ctcaatttct	tcaggattta	aaatcttga	ggattgatct	180
cgcctcatga	cagcaagttc	aatgtttttg	ccacttgact	gaaccacttc	caggagtgcc	240
ttgatccuua	gcttaattgg	cagatcatct	gcttcaatgg	cttcggtcag	atagttcttc	300

t

301

<210> 235
 <211> 283
 <212> DNA
 <213> Homo sapien

<400> 235

tggggctgtg catcaggcgg gtttgagaaa tattcaattc tcagcagaag ccagaatttg	60
aattccctca tcttctaggg aatcatttac cagggttggg gaggattcag acagctcagg	120
tgctttcact aatgtctctg aacttctgtc cctctttgtt catggatagt ccaataaata	180
atgttatctt tgaactgagc ctcataaggag agaataaag aactctgagt gatataaaca	240
ttaggggattc aaugaatat tagatttaag ctcacactgg tca	283

<210> 236
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 236

aggtcctccn ccaactgcct gaagcacggt taaaattggg aagaagtata gtcragcata	60
aatactttta aatcgatcag atttccttaa ccacatgca atctcttca ccagaagagg	120
tgggagcagc atcattaata ccaagcagaa tgcgtaataa ataaatacaa tggatatag	180
tgggtagacg gcttcacgag tacagtgtac tgbgtatcg taatctggac ttgggttgta	240
aagcatcgtg taccagtcag aaagcatcna cactcgacac gaacgaatat aaagaacacc	300
a	301

<210> 237
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 237

cagtggtagt ggtggtggac gtggcggttg tctggtgccc ttttttgggtg ccggtcacia	60
actcaatttt tgttcgctcc ttttttggct ttccaatttt gtcacatcca attttctggg	120
ccttggctaa tgcctcatag taggagtcct cagaccagcc atggggatca aacatatact	180
ttgggtagtt ggtgccaagc tegtcaatgg cacagaatgg atcagcttct cgtaaatcta	240
gggttccgaa attctttctt cctttggata atgtagtcca tatccattcc ctcttttate	300
t	301

<210> 238
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 238

gggacaggttt tttttttttt ttttttgatg gtgcagaccc ttgctttatt tgtctgaatt	60
gttcacagtt cagccccctg ctCagaaaac caacggggcca gctaaggaga ggaggaggca	120
ccttgagact tccggagtcg aggtcttcca gggttcccca gccatcaat cattttctgc	180
acccccctgce tgggaagcag ctccctgggg ggtgggaattg ggtgactaga agggatttca	240
gtgtgggacc cagggtctgt tctccacagt aggaggtggg agggatgact aattttttta	300
t	301

<210> 239
 <211> 239

<212> DNA

<213> Homo sapien

<400> 239

ataagcagct aggggaattct ttatttagta atgtcctaac atanaagttc acataactgc	60
ttutgtctaa ccttgatact gagctttgtg acaccccaga aataactaag agaaggcnaa	120
cataatcct tagagatcaa gaaacattta cacagttcaa ctgttcaana atagctcaac	180
attcagccag tsagtagagt gtgaatgcca gcatacacag tatacaggtc cticaygga	239

<210> 240

<211> 300

<212> DNA

<213> Homo sapien

<400> 240

ggtcctaattg aagcagcagc ttccacattt taacgcaggt ttacgggtgat actgtccttt	60
gggatctgcc ctccagtgga accttttaag gaagaaagtgy gcccaagcta agtcccacat	120
gctgggtgag ccagatgact tctgttccct ggtcaccttc ttcaatgggg cgaatggggg	180
ctgccaggtt tttaaatca tgccttcatc tgagacacac ggtcaccttc cctctctcac	240
gctgtgggtg tactttgatg aaaataccca ctttgttygc ctctctgaag ctataatgtc	300

<210> 241

<211> 301

<212> DNA

<213> Homo sapien

<400> 241

gaggtctggg gctgaggtct ctgggtcagg aagaggaggt ctgttggagt ggaagccaga	60
cccttttggg ggaacttcca ccagctatgt tgggtctctt gagggaatgc aacaaggctg	120
ctcctccatg tattggaaaa ctgcaactct gactraactg gaagggaagt ctgctgccag	180
tgtgagaaac cagcctgagg tgacagaaac ggaagcaaac aggaacagcc agtctttctt	240
tctctctctt gtcatacggg ctctctcag cttctctctt tgtcaggggc ctaaaaggga	300

g

301

<210> 242

<211> 301

<212> DNA

<213> Homo sapien

<400> 242

ccgaggtcct gggatgcac caatcactct gttcacgtg acttttatca ccatacaatt	60
tgtggcattt cctcattttc tacattgttg aatcangagt gtaaataaat gtatctcgat	120
gtcttcaaga atatacatt cctttttcac tgaacccat tcanaatata agtcaagaat	180
ctcaatatca acaaatatat caagcaaac ggaaggcaga ataactacca taatttagta	240
taagtaccca aagttttata atcaaaaagc cctantgata accattttta gaattcaatc	300

a

301

<210> 243

<211> 302

<212> DNA

<213> Homo sapien

<400> 243

aggtaagtcc cagtctgag ctcaaaagat ctggatagag cataggctca tcgacgacat	60
ggtyggccaa gctatgaac cagagggagg ctccatctgg gcctgtaaaa acctatgatg	120

```

tgacgtgcag tcggactcty tggcccaagg gtatggctct ctgggcatga tgcccagcgt    180
gctggtttct cccgatggca agacagtaga agcagaggct gccacaggga ctgtaccctg    240
tcactaccgc atgttcacga aaggacagga gacgtccacc aatccattg cttrcatttt    300
t                                                                                   301

```

<210> 244
 <211> 300
 <212> DNA
 <213> Homo sapien

```

<400> 240
gctggtttct aagaatgaaa tgaatgattc tacagctagg aottaacctt gaaatggaaa    60
gtcatgcaat cccatttgcg ggatctgtct gtgcacatgc ctctgtagag agcagcattc    120
ccagggaact tggaaacagt tgacactgta aggtgcttgc tccccaggac acatccctaaa    180
aggtgttcta atggtgaaaa cgtcttccct ctctcttgc cctctctatt tatgtgaaac    240
actgtttgtc ttttctgtat cttttctaaa ctgtaaagt cacttctgaa aatguatata    300

```

<210> 245
 <211> 301
 <212> DNA
 <213> Homo sapien

```

<400> 245
gtctgagtat ttaaatgtt attgaattta tccccuacca atgttagaaa agaaagaggt    60
tatatactta gatataaat gaggtgaatt actatccatt gaaatcatgc tcttagaatt    120
aaggccagga gatattgtca tctatgtara ctctcaggaca cttagagtata gcagccctat    180
gttttcaaa agcagagatg caattaaata ttgttttagca tcaaaaaggc cactcaatac    240
agctaatata atgaagagac taatttctaa agcaattctt tataatttct aaagtittaa    300
g                                                                                   301

```

<210> 246
 <211> 301
 <212> DNA
 <213> Homo sapien

```

<400> 246
ggctcgtcct acaatgcctg ctctctgaaa gaagtcggca ctctctagaa tagctaaata    60
acctgggctt attttaagga actatttcta gctcagatcg gttttctat ggctaaaata    120
agtgcctctt gtgaaaatta aataaaacag ttaattcraa gccttgatat atgttaccac    180
taacaatcat actaaatata ttttgaagta caaagtctga catgctctaa agtgacaacc    240
caaatgtgtc ttaaaaaaca cgttctctaa aagggtatgct ttactactac aatgtagaaa    300
c                                                                                   301

```

<210> 247
 <211> 301
 <212> DNA
 <213> Homo sapien

```

<400> 247
aggtcctttg gcagggtctc tggatcagag ctcaaaactgg agggaaaaggc atttcgggta    60
gctaagaagg gcgactggcg gragcacaac caagggaaggc aaggctgttt cccccacgct    120
gtgtcctgtg ttcagggtgc acacacaatc ctcattggga caggatcacu catgcgctgc    180
ccttgatgat caagggtggg gctcaagtgg attaagggag gcaagttctg ggttccttgc    240
cttttcaaac catgaagtca ggctctgtat cctcctttt cctaaactgat attctaacta    300
a                                                                                   301

```


<210> 248
 <211> 302
 <212> DNA
 <213> Homo sapien

<400> 248
 aggtccttgg agatgcatt tcagcugag gactttttctw ttgggaagta caccrtcaat 60
 attaggaaga ttcttagggg taatttttct gaggaaggag aactagccaa cttaagaatt 120
 acaggaagaa agtgggttgg aagacagcca aaggaataaa agcagattaa attgtatcag 180
 gtacattcca gctgtttggc aartccataa aaacatttca gattttaate ccaaatctag 240
 ctaatgagac tggatttttg tttttttatgt tgtgtgtcgc agagctaaaa actcagttcc 300
 c 301

<210> 249
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 249
 gtccagaggg agcacctggt gctgaactag gcttgcctg ctgtgaactt gcacttggag 60
 ccttgacgtc gctgttctcc cggaaaaacc cgaccgacct ccgggatctc cgtccggccc 120
 ccagggagac acagcagtga cttagagctg gtccgacact gtgctcctc cctcacggcc 180
 catcgtaatg aatcatcttg aaaaattaatt ccaccatcct ttcagattct ggatggaaag 240
 actgaatctt tgactragaa ttgtttgctg aaaaagantga tgtgacttcc ttagtcattt 300
 a 301

<210> 250
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 250
 ggtctgtgac aaggacttgc aggctgtggg aggcaagtga cccttaacac tacatttctc 60
 cttatcttta ttggcttgat aaacataatt atttctaaca ctagcttatt tccagttgcc 120
 cataagcaca tcagtacttc tctctggctg gaatagttaa cttaagtatg gtacatctac 180
 ctaaaagact actatgtgga ataatacata cttaatgaatg attacatgac tttaagacta 240
 caataaaacc aaacatgctt ataacattaa gaaaaacaa aaagatacat gattgaaacc 300
 a 301

<210> 251
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 251
 gccgaggtac tacatttggc ccagtttccc cctgcaccc ctccagggtcc cctgctcat 60
 agacaacctc atagagcata ggagaactgg ttgcccggg ggcaggggga ctgtctggat 120
 ggcagggggtc ctcaaaaatg ccactgtcac tggcaggaaa tgcctctgag cagtacacct 180
 cattgggata aatgaaaagc ttcaagaaat ctccagggtc actctctga aggccgggaa 240
 cctctggagg ggggcagtgg aatcccagct ccaggatgga tctgtctgaa aagatatcct 300
 c 301

<210> 252
 <211> 301

<212> DNA

<213> Homo sapien

<400> 252

gcaaccacac	actctgttct	acgtgactct	tatcaccata	caattctgtg	catttcccca	60
ctttctacat	tgtagaatca	agagtgttaa	taastgtata	togatgtctt	caagaatata	120
tcattccttt	ttcactagga	acccattcaa	aatataagtc	aagaatctta	atatcaacaa	180
atatatcaag	caactctggg	ggcagaatca	ctaccataat	ctagtataag	tacccaaagt	240
tttatcaatc	aaaagcccta	atgataacca	cttttagaatt	tcaatcatca	ctgtagaattc	300
a						302

<210> 253

<211> 301

<212> DNA

<213> Homo sapien

<400> 253

ttccctaaga	agatgttact	ttgttgggtc	ttgttcccc	tccatctcga	ttctgtacc	60
caactaaca	aaaaaataa	agaaaaaatg	tgttcgttc	tgaanaataa	cttcttagct	120
tggtctgatc	gttttcagac	cttaaaatat	aaacttgttt	caaaagcttt	aatccatgtg	180
gatttttttt	cttagagaa	cacaaacat	aaaaggagca	agtcggactg	aatacctgtt	240
cccatagctg	ccacagggta	ttcctcacat	ttctccata	ggaaaatgct	cttcccaag	300
g						302

<210> 254

<211> 301

<212> DNA

<213> Homo sapien

<400> 254

cgctgcgcct	ttcccttggg	ggagggggca	ggccagaggg	ggtccaagtg	cagcacgagg	60
aacttgacca	attcccttga	agcgggtggg	ttaaaacctg	taaatgggaa	caaatccctt	120
craaatctct	tcatcttacc	ctggtggact	cctgactgtt	gaattttttg	gttgaaacaa	180
gaaaaaata	angctttggg	cttttcaagg	ttgcttaaca	ggtactgaaa	gactggcctc	240
acttaaacctg	agccaggaaa	agctgcagat	ctattaatgg	gtgtgttagt	gtgcagtgcc	300
t						302

<210> 255

<211> 302

<212> DNA

<213> Homo sapien

<400> 255

agctttttct	ttttttttct	ttttttttct	ttcattaaaa	aatagtgtct	tttattataa	60
attactgaaa	tgtttttttt	ctgaatataa	atataaatat	gtgcaaatgt	tgacttggat	120
tgggattttg	ttgagttctt	caagcatctc	ctaataccct	caaggguctg	agttaggggg	180
aggaaaaagg	actggagggt	gaatctttct	aaaaaacaa	agtgaattgag	gcagatttga	240
aacattatta	aaaaacaa	aacaaacaaa	aaatataaga	aaaaaacacc	cccaacacac	300
aa						302

<210> 256

<211> 301

<212> DNA

<213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 256
 gtccagaaa acattgaaagg tggcttcacca aagtcctaact agggatatacc cctctagcct 60
 aggaaccctcc tccccaracc tcaatccacc aaaccatcca taatgcaccc agataggccc 120
 acccccaaaa gcctgggacac cttaggcara cagttatgac caggacagac tcatctctat 180
 aggcataatag ctgctggcraa actggcatca cctggcttgc ggggatgggg gggcagtgct 240
 gtggcctctc ggcctgggta gcaagaacat ttagggtagg cctaaagttan tctgtttagt 300
 t 301

<210> 257
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 257
 gttgtggagg aactctggct tgcctattaa gtctactga ttttcactat cccctgaatt 60
 tcccactta tttttgtctt tcaactatgc aggccttaga agaggtctac ctgcctccag 120
 tottacctag tccagtctac cccctggagt tagaatggc atcctgaagt gaaaagtaat 180
 gtccacattac tcccttcagt gatttcttgc agnagtgcc atcctgaat gccaccaaga 240
 tottaattct cactcttcta ctcttatctc tttagactct ctttcaaccg gagaaggctc 300
 c 301

<210> 258
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 258
 cagcagtagt agatgccgta tgcacgacg cccagcactc ccaggatcag caccagcacc 60
 agggggcccag ccaccaggcg cagaagcaag ataaacagta ggctcaagac cagagccacc 120
 cccagggcag caagaatcca ataccaggac tgggcataat ctccaagat cttaaccactg 180
 atgtctcggg cattgaggct gtcaataana cgtgatccc ctgctgtatg gtggtgtcat 240
 tgggtgatccc tgggagcgcc ggtggagtaa cgttggtcca tggaaagcag cgcccaaac 300
 t 301

<210> 259
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 259

```

tcatatatgc aaacaaatgc agactangcc tcaggcaggg actaaaggac atctcttggg    60
gtgtcctgaa gtgatttggg cccctggagg cagacaccta agttaggaat ccagtgggaa    120
gcaaagccat aggaagccc aggatccctt gtgatcagga agtgggcccag gaaggtctgt    180
tccagctcac atctcatctg catgcagcac ggaccggatg cgcaccactg gtcttggctt    240
ccctcccatc ttctcaagca gtgtcctctt tgagccatct gcacccttgg ctccaggtgg    300
c

```

301

<210> 260

<211> 301

<212> DNA

<213> Homo sapien

<400> 260

```

ttttttttct cccaaaggaa aaagaaggaa caagtctcat aaaaccadac aagcaatggg    60
aagggtgtctt aacttgaaa agattagggg tcattgggtt acaagttata attgaatgaa    120
agaactgtaa cagccacagt tggccatttc atgcraatgg cagcaaacaa caggattaac    180
tagggcnaaa taataaagtg tgtggaaagg ccgataaagt cttaataaac agactgattc    240
actgagacat cagtacctgc ccgggcgggc gctcgagccg aattctgcag atatccatca    300
c

```

301

<210> 261

<211> 301

<212> DNA

<213> Homo sapien

<400> 261

```

aaatattcga gcaaatccctg taactaatgt gtctccataa aaggctttga actcagtgaa    60
tctgcttcca tccacgattc tagcaatgac ctctcggaca tcaagctcc tcttaagggt    120
agcaccactc attccatcac attcatcagc aggaataaaa ggctcttcag aaggttcaat    180
ggtgacatcc aatttcttct gataatttag attcctcaca accttcttag ttaagtgaag    240
ggcatgatga tcatccaaag ccagtggttc acttactcca gactttctgc aatgaagatc    300
a

```

301

<210> 262

<211> 301

<212> DNA

<213> Homo sapien

<400> 262

```

gaggagagcc tgttacagca ttgttaagca cagaatactc caggagtatt tgtaatgttc    60
tgtgagcttc ttgcgcgaag cctctcagaa atttanaaag atgcaaatcc ctgagtccac    120
cctagacttc ctaaacacga tctctcgggg ctgggaacctg gcactctgca ttgtaatga    180
gggctttctg gtgcacacct aattttgtgc atctttgccc taaatcctgg attagtccc    240
catcattacc cccacattat aatgggatag attcagagca gatactctcc agcaaaagaa    300
c

```

301

<210> 263

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (301)

<223> n = A,T,C or G

<400> 263

tttagcttgt	ggtaaatgac	tcacaaaact	gatttttaaa	tcaagttaat	gtggaattttg	60
aaacttacta	cttaactcta	attcacaata	acaatggcat	taagggttga	cttgagttgg	120
ttcttagtat	tatttatggc	aaataggctc	ttaccacttg	caataaacty	gccacatcat	180
taatgactga	cttccagta	aggctctcta	aggggtaaqt	angaggatrc	acaggatttg	240
agatgctcay	gccccagaga	tcgttcgata	caaccctctt	attttcagag	gggaazatgg	300
g						301

<210> 264

<211> 301

<212> DNA

<213> Homo sapien

<400> 264

aaagacgtta	aaacactcta	ctaccacttg	tcggaactctc	aaagggtaaa	tcacaaaacc	60
aatgaatgac	tcataaaaac	atatctacat	ttaattggctt	gtagacaata	aaanaacaaq	120
gtggatagat	ctagaattgt	aacattttca	gaaaaccata	acatttgaca	gatgggaaag	180
ctnaattata	gatgcaaugt	tataactaaa	ctactatagt	agtaaagaaa	tacattttac	240
acccttcata	taatttcaat	atcttggcct	gaggcaactcc	acaaaatgta	tcacgttcat	300
a						301

<210> 265

<211> 301

<212> DNA

<213> Homo sapien

<400> 265

tgrccaagtt	atgtgtaagt	gtatccgcac	ccagaggtaa	auctacacty	tcattcttgt	60
cttcttgtga	cgcagtattt	cttctctggg	gagaagccgg	gaagtcttct	cctggctcta	120
catattcttg	gaagtctcta	atcaactttt	gttccatttg	tttcatttct	tcaggaggga	180
ttttcagttt	gtcaacatgt	tctctaaaca	caattgcccc	tttctgtaa	gaaatccaaag	240
cagtcacagg	ctttgacatg	tcaacaacca	gcataactag	agtatccttc	agagatacgg	300
c						301

<210> 266

<211> 301

<212> DNA

<213> Homo sapien

<400> 266

taccgtctgc	ccttctctcc	atccaggcca	tctgcgaatc	tcattgggtc	cttctattcg	60
acaccagatc	actctttcct	ctarccacag	gcttgctatg	agcagagagc	acaacctcct	120
ctcttctgtg	ttccagcttc	tttctctgtt	cttccacccc	cttaagtctt	attcttgggg	180
atagagacac	caatacccat	aacctctctc	ctaagcctcc	ctataaccca	gggtgcacag	240
caccgactcc	tgacaactgg	taaggccaat	gaactgggag	ctcacagctg	gctgtgcctg	300
a						301

<210> 267

<211> 301

<212> DNA

<213> Homo sapien

<400> 267

aaagagcaca	ggccagctca	gcctgccttg	gccatctaga	ctcagcctgg	ctccatgggg	60
------------	------------	------------	------------	------------	------------	----

```

gtttcagtg ctgagtcac ccaggaaag ctcacctaya ccttctgagg ctgaatcttc      120
atcctcacag gcagcttctg agagcctgat attcctagcc ttgatggctt ggagtaaaagc      180
ctcattctga ttctctctct tcttttcttt caagttaggt ttcttcacac cctctgttc      240
aatcgccttc agcttgtctg ctttagccct cattccaga agcttcttct ctttggcacc      300
t

```

<210> 268

<211> 301

<212> DNA

<213> Homo sapien

<400> 268

```

aatgtctcac tcaactactt ccagcctac cgtggcctaa ttctgggagt tttcttctta      60
gatcttggga gagctggctt ttctdaggag aaggaggaaag gacagatgta actttggatc      120
tcgaagagga agtctaatgg aagtaattag tcaacggctc ttgttttagac tcttgggaata      180
tgctgggtgg cttagtgagc ccttttggag aaagcaagta ttattcttaa gtagtaacca      240
cttcccattg ttctacttct taccatcatc aattgtatat catgtattct ttggagaact      300
a

```

<210> 269

<211> 301

<212> DNA

<213> Homo sapien

<400> 269

```

taacaaatata cactagctat ctttttaact gtccatcatt agcaccaatg aagattcaat      60
aaaattacct ttattccacac atctcaaaac aattctgcaa attcttagtg aagtttaact      120
atagtcacag accttaata ttcaacttgt ttctatgtc tactgaaaat aagtttacta      180
ctttcttggg taattctttac aaatcttat taaaattcct ggtattatca cccccaattt      240
tacagttagca caaccacctt atgtagcttt tacatgatag ctctgtagaa gtttcacatc      300
t

```

<210> 270

<211> 301

<212> DNA

<213> Homo sapien

<400> 270

```

cattgaagag ctttttgcga acatcagaac acaagtgtct ataaaattaa ttaaggcctta      60
cacaagaata catattctt ttatttctaa ggagttaaac atagatgtag ctgatgtgga      120
gagcttgctg gtgcagtgc tattggataa cactattcat ggccgaattg atcaagtcaa      180
ccaactcctt gaactggatc atcagaagaa ggggtgggtg cgatatactg cactagataa      240
tggaccaaac aactaaattc tctcccagg ctgcatcagt aaactggctt aacagaaaac      300
a

```

<210> 271

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 271

```

aaaagggttct cattaagatca acaatttcaa taattatttg ataggacatt ctttttcatt 60
tttatagctc atctttaggg ttgatattca gtccatgctt ccttgctgt tttgatoca 120
gaattgcaat cacttcattc gctgtattc gctccaattc tctataaagt ggggtccaagg 180
tgaaccacag agccacagca cactctttc ccttggtgac tgccttcac ccattgaggc 240
tctctcctcc agatganaac tgatcatgca ccacatttt gggttttata gaagcagtc 300
c

```

<210> 272

<211> 301

<212> DNA

<213> Homo sapien

<400> 272

```

taatttgctc agccacagat aacaccaatc aaatggaaca atcactgtc ttcaantgtc 60
ttatcagaa acccaatgag cctggaaatc tcataatcc taaacatgac gttatttagga 120
tcaataaatt cctcatgat gaggaaagaa aattctttgc gacccctcc tgcattcaca 180
gcctcttctc caaccaatc aaccttgagt ggcttcttgc aatctatgtt ctttcttttc 240
ctaaggactt ccattgcatc tctacaaata tttctctac gacacctag aattaagcag 300
g

```

<210> 273

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (301)

<223> n = A,T,C or G

<400> 273

```

acatgttgtt atgtgtatct ttgggaaan aanaagacat cttgtttayt attttcttgg 60
agagagctg ggaactggt aatcacwta tttgctayta tyactttaat ctgactygaa 120
gaaccgtcta acaataaaat ttaccatgtc dtatatctct tatagtatgc ttatttcacc 180
tcttctctgt ccagagagag tatcagtgc ananatttma gggcgaamac atymattggt 240
gggacttnty ttacngagm auctgcccg agcgccctcg makengantt ccgcसाना 300
t

```

<210> 274

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (301)

<223> n = A,T,C or G

<400> 274

```

cttatataat cttcttcaga ggcaaaagag gagatgggtc atgtagacaa ttctttgag 60
aacagtaaat gattattaga gagaangaat ggaccaagga gacagnaatt aacttgtaa 120
tgattctctc tggaaatctg atgagatcaa gaggccagct ttagcttgtg gaaaagtcca 180
tctaggtatg gttgcattct cgtcttcttt tccgcagtag ataattgagg aaaccgaaggc 240
aattgtgctt cttttgataa gaagctttct tggtcataat aggaattcc aganaagtc 300

```

C

301

<210> 275
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 275
 tcggtgtcag cagcagctgg cattgaacat tgcattgtgg agcccaaaccc acagaaaatg 60
 gggtgaaatt ggccaacttt ctatcaactt atgttggcua ttttggcacc aacagtaagc 120
 tggcccttct aataaaagaa aattgaaagg tttctcacta aacgggatta agtagtggag 180
 tcaagagact cccagggctc agcgtacutg cccgggctgg cgtcgaagc cgaattctgc 240
 agatcccat cacactggcg gncgctcgan catgcactta gaagggccaa ttccgacctat 300
 a 301

<210> 276
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 276
 cgtacacata ctcaactaat aatgacatgc attgtggtct tattactata ctgattacat 60
 ttatcatgtg acttctaatt agaaatgta tccaaagaca aaacagcaga tatacaaat 120
 taaagagaca gaagatagac actaacagat aaggcaactt atacattgag aatccaaatc 180
 caatacatit aacattttgg gaaatgaggg ggacaaatgg aagccagatc aaatttgtgt 240
 aaaaactatc agtaugtttc ccttgcctca tctctgagaa ggtctctcctt caatggggat 300
 g 301

<210> 277
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 277
 tttgttgatg tcagratitc attacttgcg ttatgagtgc tccctggga aattctaaag 60
 atacagagga cttggaggaa gcagagcaac tgaatttaat ttaaaagaag gaaaacattg 120
 gaatcatggc actctgata ctttcccaa tcaaacactc caatgcccc cctcgtct 180
 caccatagtg gggagactaa agtggccacg gatttgcctc anggtgacag tgcgttctga 240
 gttcncgtgc gattacatct gaccagttct ctttttccga agtctntccg tccaatcttg 300
 c 301

<210> 278
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 278

taccactaca	ctccagcctg	ggcaacagag	caagacctgt	ctcaaaagcat	aaaatgggaat	60
aacatatcaa	atgaaacagg	gaaaatgaag	ctgacacattt	atggaagcca	gggcttgtca	120
cagtctctac	tgttattatg	cattacctgg	gaatttatat	aagcccttaa	taataatgcc	180
aatgaacatc	tcattgtgtg	tcacaatgtt	ctggcactat	tataagtgtc	tcacagggtt	240
tatgtgttct	tcgttaacttt	atggantagg	tartcgyccg	cgaacargct	aagccgaatt	300
c						301

<210> 279
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 279

aaagcaggaa	tgacaaagct	tgcttttctg	gtatgttcta	gggtgattgt	gacttttact	60
gttatattaa	ttgccaatat	aagtaaacat	agattatata	tgtatagtgt	ttcacaagac	120
ctagaccttt	accttcacag	cacccccacg	tgcttgatat	ttcagagtca	gtcatttggt	180
atacatgtgt	agttccaaag	cacataagct	agaanaanaa	atatttctag	ggagcactac	240
catctgtttt	cacatgaat	gccacacaca	tagaactcca	acatcaactt	cattgcacag	300
a						301

<210> 280
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 280

ggtaactggag	ttttcctccc	ctgtgaaaac	gtaactactg	ttgggagctg	attgaggatg	60
tagaaagggt	gtggaaccaa	attgtggtca	atggaaatag	gagaatatgg	ttctcaactc	120
tgagaaaaaa	acctaaagatt	agcccaggga	gttgccctgt	acttcagttt	ttctgcctgg	180
gtttgatata	gttttaggggt	gggttagat	taagatctaa	attacatcag	gacaangaga	240
cagactatta	actccacagc	taattaaagg	ggatgtttcc	atgtttattt	gttaaaagcag	300
t						301

<210> 281
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 281

aggtacaaga	aggggaatgg	gaaagagctg	ctgctgtggc	attgttcaac	ttggatatcc	60
gccgagcaat	ccaaatcctg	aatgaagggg	catcttctga	aaaaggagat	ctgaatctca	120
atgtggtagc	aatggcttta	tcgggttata	cggatgagaa	gaactccctt	tgagagagaa	180
tgtgtagcad	actgcgatta	cagctaaata	acccgtattt	gtgtgtcatg	tttgcatttc	240

tgacaaagtga aacaggatct tacgatggag ttttgtatga aaacaaagtt gcagtacrtc 300
g 301

<210> 282
<211> 301
<212> DNA
<213> Homo sapien

<400> 282
caggtaactac aganttaaaa tactgacaag caagtagttt cttggcgtgc acgaattgca 60
tcragaaccc aaaaatttaag aaattcaaaa agacattttg tgggcacclg ctagcacaga 120
agcgcagaaag caaagcccag gcagaaccat gctaaccctta cagctcagcc tgcacagaag 180
cgcagaagca aagcccaggc agaacatgc taaccttaca gctcagcctg cacagaagcg 240
cagaagcana gcccaggcag aacatgctaa ccttacagct cagcctgrac agahgcacag 300
a 301

<210> 283
<211> 301
<212> DNA
<213> Homo sapien

<400> 283
atctgtatac ggcagacaaa ctttataxag tgtagagagg cgagcgaag gatgcaaaag 60
caattcgaag gctttataat aatatgctgc ttgaaaaaaa aaatgtgtag ttgatactca 120
gtgcattcgc agacatagta aggggttgc ctgaccaatc aggtgatca tttttctatc 180
acttcccaag ttttatgcaa aaattttgtt aaattctata atggtgatat gcattcttta 240
ggaaacatat acatttttaa aaattctatt tatgtgaag ctgacagacg aatttgcttt 300
g 301

<210> 284
<211> 301
<212> DNA
<213> Homo sapien

<400> 284
caggtaacaa acgctattta gtggcctaga atttgaacat ttgtggtctt catctacttt 60
gcttcgtgtg tggycaaaag cacatcttcc ctaaatatat attaccaaga aaagraagaa 120
gcagatttag tttctgacaa aacaaaacagg ccaaaagggg gctgacctgg agcagagcat 180
ggtgagaggc aagggatgag agggcaagtt tgttctggac agatcgtgc ctactttatc 240
actgggttaa aagaaaacaa agttcattga tgtcgaaggc tatatacagt gttcagaatt 300
a 301

<210> 285
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 285
acataccat gatcggatcc cccaccatt atacgttga tgtttacata aatattcttc 60
aatgacatc agtgttttaa aaaaaatacc gaaaaattcc tctgcaccc aatctctaac 120

```

CAGGAAAGCA aatgctattt acagacctgc aagccctccc tcaaacnana ctatttctgg 180
attaaatatt tctgactttc tttagaggtca cactactagg caaatgctat ttacgatctg 240
caaaagctgt ttgaagagtc aaagccccc tgtgaacacg atttctggac cctgtaacag 300
t 301

```

```

<210> 286
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 286
taccactgca ttccagcttg ggtgacagag tgagactccg tctccaaaa aaactttggt 60
tgtatattat tttgacctta cagtggatca ttctagttag aaggyacagt aagatttttt 120
atcaaaatgt gtcattgccag taagagatgt tatattcttt tctcatctct tccccaccca 180
aaaataagct accatatagc ttataagtc ccaatttttg ccttttacta aaatgtgatt 240
gtttctgttc attgtgtatg ctccatcac tatattagga aaattccatt ttttcccttg 300
t 301

```

```

<210> 287
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 287
tccagatctg ggaactaaat attaaaaatg agtgctggctg gatatatgga gaactgttggg 60
cccagaagga acgttaggat cagatattac aacagcttly ttttgagggg tagaatatg 120
aaatgatttg gttatgaacg cactgtttag gcagcagggc cagaatcttg accctctgcc 180
ccgtggttat ctctctccca gtttggctgc ctcatgttat cactgtattc catctctgtt 240
gttgcattgc ttgtgaagcc atcaagattt tctcgtctgt ctctctctca ttggtaatgc 300
t 301

```

```

<210> 288
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 288
gtacacctaa ctgcaaggac agctgaggaa tgtatcgggc agccgctttt aaagaagtag 60
agtcaatagg aagacaaatt ccagttccag ctcatgtctg gtatctgcaa agctgcaaaa 120
gactttttaa gacaatttca agagaatatt tctttaaagt tggcaatttg gagatcatac 180
aaaagcatct gcttttctga ttttaatttag ctcatctggc cactggaaga atccaaacag 240
tctgccttaa ttttggatga atgcattgat gaaattcaat aatttagana gttcaaaaaa 300
a 301

```

```

<210> 289
<211> 301
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1) ... (301)
<223> n = A,T,C or G

```

```

<400> 289

```

```

ggtaacactgt ttccatgta tgtttctaca cattgctacc ttagtgctcc tggaaactta      60
gtttttgatg tctccaagta gteracacctc atttaactct ttgaaactgt atcatctttg      120
craagtaaga gtggtggcct atttcagctg ctttgacaaa atgactgggt cctgacttaa      180
cgttctataa atgaatgtgc tgaagcaaa tgcccatggt ggcggcgaaan aagagaaaga      240
tgtgtttctg ttcggactct ctgtggtccc ttcraatgct gtgggtttcc aaccagngga      300
a
301

```

<210> 290
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

```

<400> 290
acactgagct cttcttgata aatatacaga atgcttggca tatacaagat tctatactac      60
tgactgatct gttcatttct ctacacagctc ttacccccaa aagcttttcc accttaagtg      120
ttctgacctc cttttctaatt cacagtaggg atagaggcag anccacctac aatgaacctg      180
gagttctatc aagaggcaga aacagcacag aatcccatgt ttaccattcg ctagcagtgc      240
tgccttgaaac aaaaaccttt ctccatgtct cattttcttc atgcctcaag taacagttag      300
a
301

```

<210> 291
 <211> 301
 <212> DNA
 <213> Homo sapien

```

<400> 291
caggtaacca ttcttctcat cctagaaach ttctatttta tgttgttgaa acataacaac      60
tatatacagct agatttttct tctatgtttt acctgctatg gaaaacttga cacactctgc      120
tttactcttt cgtttatagg tgaatcacaa aatgtatttc tatgtattct gtagttaaat      180
agccatgggt gtttacttca tttaatltat ttagcatcaa gacattatga aaaggcctaa      240
acatgagctc cacttcccc acaactaatt agcatctgtt atttcttaac cgtaatgcct      300
a
301

```

<210> 292
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{301}
 <223> n = A,T,C or G

```

<400> 292
accttttagt agtaatgtct aataataaac aagaaatcaa ttttataagg tccatatagc      60
tgtattaat aacttttcaag tttaaaagat aaaaataccat catttcaat gttggtatcc      120
aaaaccaaa9 notataaccg aaagggaana cagatgagac ataaaatgat ttgcnagatg      180
ggaatatatg tascityatg atgttnatta aattccagtt ataatagtgg ctacacactc      240
tcactacac cacaagcccc acagtcctat atgccacaaa cacattcccc taacttgaaa      300
a
301

```

100

<210> 293
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 293
 ggtaccaagt gctygtgcca gccgtgtacc tgttctcact gaaagtcctg gctaattgctc 60
 ttgtgtatgc acttctgatt ctgacaaica atcaatcaat ggcctagagc actgactgtt 120
 aacacaaacg tcaactagcaa agtagcaaca gctttaagtc taatatcaaa gctgttctgt 180
 gtgagatttt tttaaaaggc tacttgtata ataacccttg tcctttttta tgcacrtcgg 240
 ccgcgaccac gctaagccga attctgcaga tatarcatcac actggcggcc gctcgggcat 300
 g 301

<210> 294
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1) ... (301)
 <223> n = A,T,C or G
 <400> 294
 tgacccataa caatatatcac tagctatctt cttaactgtc cttcattagc accaatgaa 60
 attaatataa attaccttta ttcaaacatc tcaaaacaa tctgcnaatt cttagtgaag 120
 tttactata gtcacaganc ttcaattatc acattgtttt ctatgtctac tgaatatagg 180
 ttcaactact ttctgggata ttctttacaa aatcttatta aaatccctgg tattatcacc 240
 ccaattata cagtagcaca accaccttat gtatgtttta catgatagct ctgtagaggt 300
 t 301

<210> 295
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 295
 gtactttttc tctccctccc tctgaattta attctttcaa ctgcgaattt gcaaggatta 60
 cacatttcac tgtgtgtatc attgtgttgc aaaaaaaa gtgtctttgt ttaaaattac 120
 ttggtttgtg aatccatctt gctttttccc cattggaaat agtcattaac ccattcttga 180
 actggttaga aaacrtctga agagctagtc tatcagcacc tgacagggtg attggatgg 240
 tctcagAAC atttcaccca gacagcctgt ttctatcctg tttaataaat tagtttgggt 300
 tctct 305

<210> 296
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 296
 aggtactatg ggaagctgct aaaaataatc ttgatagtac aagtatgtac tgtgctatct 60
 cacctagttag taaactaaa ataaactgaa actctatgga ctctgaagtt atttcccttg 120
 attaataga attaataaa caatatggg aaacatgaaa ccattgcaatc cactatcaac 180
 ttgaaaaaag tgattgacg aaccacttag ctttcagatg atgaacactg ataatgcat 240

tgtcatttct ataaatttta aattctgtta ataagatggc ctacagggag gaaaaagggg 300
c 301

<210> 297
<211> 300
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)... (300)
<223> n = A,T,C or G

<400> 297
actgagtttt aactggacgc caagcaggca aggcctggaag gttttgcctt ctttgtgcta 60
aagggttttg aaaccttgaa ggagaatcat ttggacaaga agtactaag agctagaga 120
acaaagangt gaaccagctg aaagctctcg ggggaanctt acatgtgtt taggcctgt 180
tccatcattg ggaatgcact ggcacacct caaaatttgt ctgggctggc ctgagtggtc 240
accgcacctc ggccgcgacc acgctaagcc gaattctgca gatatccatc acactggcgg 300

<210> 298
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)... (301)
<223> n = A,T,C or G

<400> 298
tatggggttt gtcaaccaaa agctgatgct gagaagggcc tccctggggc ccttcccgcg 60
ggcatctgag agacctggg ttccagtggt tctggaaatg ggtccuagtg ccgccggctg 120
tgaagctctc agatcaatca cgggaagggg ctggcggtgg tggccacctg gaaccacctt 180
gtcctgtctg ttacatctc actaycaggt ctctcttggg ccttcaatc tgttccctta 240
caacagtgac ctgtgcattc tgcgtgggc tgcgtgtct gcaggtggct ctacgcgagg 300
t 301

<210> 299
<211> 301
<212> DNA
<213> Homo sapien

<400> 299
gttttgagac ggagtttcac tcttgttggc cagactggac tggaaatggc gggctctctg 60
tcactgcacc ctctgcctcc cagggttcag caattctcct gcttcagcct ccaggttagc 120
tgggattgca ggctcacgcc accatacca gctaattttt ttgtattttt agtagagacg 180
gagtttcgcc atgtcggcca gctggctca aactcccgac ctcaagcgac ctgcttgcc 240
cggcctccca aagtgtctgg attataggca tgagtcaaca cggccagcct aaagatat 300
c 301

<210> 300
<211> 301
<212> DNA
<213> Homo sapien

<400> 300

attcagttctt	atttgctgac	ccagtatctg	taaccaggag	tgcacaaaa	tcttgccaga	60
tatgtccac	accactggg	aaaggctccc	acctggctac	tccctctatc	agctgggtca	120
gctgcattcc	acaaggttct	cagcctaattg	agtttacta	cctgcccagtc	tcaaaactta	180
gtaaagcaag	accatgacat	tccccacgg	aaatcagagt	ttgccccacc	gtcttggtac	240
tataaagcct	gcctctaac	gtccttgctt	cttcacacca	atcccgagcg	catcccccat	300
s						301

<210> 301

<211> 301

<212> DNA

<213> Homo sapien

<400> 301

ttaatttttt	gagaggataa	aaaggacaaa	taattctagaa	atgctgtctt	ttcagttctgc	60
agaggacccc	aggtctccaa	gcaaccacat	ggccaagggtc	atgaataatt	aaaagttggt	120
gggaactcac	aaagacccct	agagctgaga	cacccacaa	agtgaggagct	cacaaagacc	180
ctcagagctg	agacacccac	aacagctggga	gctcacaaag	accctcagag	ctgagacacc	240
cacaacagca	ctcgtttcag	ctgcccacatg	tgtgaataag	gatgcaatgt	ccagzagtgt	300
t						301

<210> 302

<211> 301

<212> DNA

<213> Homo sapien

<400> 302

aggtacacat	ttagcttctg	gtaaatgact	cacnaaactg	attttaaaat	caagttaattg	60
tgaattttga	aaattactac	tttaactctaa	ttcacactaa	caatggcatt	aaggcttgac	120
ttgagttggt	tcttagctatt	atttatggta	aataggctct	taccacttgc	aaataactgg	180
ccacatcat	aatgactgac	ttcccagtaa	ggctctctaa	ggggtangta	ggaggatcca	240
caggatttga	gatgctaagg	ccccagagat	ogtttgatcc	aacctctta	ttttcagagg	300
s						301

<210> 303

<211> 301

<212> DNA

<213> Homo sapien

<400> 303

aggtaccaac	tgtggaaata	ggtagaggat	catlttttct	ttccatctca	actaagttgt	60
atatctgtct	ttgacagttt	aaacacatct	cttctgtcag	agattctttc	acaatagcac	120
tggctaattg	aaactacgct	tgcattgtta	aaatggctgt	ttgtgaaatg	atcataggcc	180
agtaacgggt	atgtttttct	aactgatctt	ttgctcgttc	cacaggagcc	tcaagacttc	240
catcgatttt	atatctgggg	tctagaaaag	gagttaatct	gttttccctc	ataanttcac	300
c						301

<210> 304

<211> 301

<212> DNA

<213> Homo sapien

<400> 304

acatggatgt	taatttgag	actgtcaacc	tgaatttgta	tttgcctggc	attgcctaact	60
------------	-----------	------------	------------	------------	-------------	----

```

tattagtttc agtttcagct taccraccttt ttgtctgcaa catgcaraas agacagtgcc      120
cttttttagtg tatcatatca ggaatcactt cacattgggt tgtgccatta ctggtgcagt      180
gactttcagc cacttgggtg aggtggaggt ggcacatgt ctccactgca aattactga      240
tttccctttt gtaattaata agtgtgtgtg tgaagattct ttgagatgag gtatatatct      300
c                                                                                   301

```

<210> 305

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> [1]...[301]

<223> n = A,T,C or G

<400> 305

```

gaggtacagc gtggtcaagg taacaagaag aaaaaaatgt gagtggcacc ctgggatgag      60
cagggggaca gacctggaca gacacgttgt catttgcgc tgtgggtagg aaaaaggagc      120
taaggaggga gaaacagata caaatctcc auctcagtat taaggatatt tcatgctag      180
aatattggtg gaaacaagaa tacattcata tggcaantaa ctaaccatgg tggacaanaa      240
ttctgggatt taagtggat accaangaaa ttgtattaaa agagctgttc atgggataag      300
a                                                                                   301

```

<210> 306

<211> 8

<212> PRT

<213> Homo sapien

<400> 306

```

Val Leu Gly Trp Val Ala Glu Leu
1                               5

```

<210> 307

<211> 637

<212> DNA

<213> Homo sapien

<400> 307

```

acagggatag aagggaaaag gagaggatga ggaagcccc ctggggattt ggcttgggtcc      60
ttgtgatcag gtggtctatg gggcttatcc ctacaaagaa gaatccagaa ataggggcar      120
attgaggaat gatacttgag cccaaagagc attcaatcat tgttttattt gccttmtttt      180
cacaccattg gtgagggagg gattaccacc ctggggttat gaagatgggt gaacacccc      240
cacatagcac cggagatatg agatcaacag ttctttagcc atagagattc acagcccaga      300
gcagggaggc gcttgcacac catgcaggat gacatggggg atgogctcgg gatttgggtg      360
aagaagcaag gactgttaga ggcaggcttt atagtaacaa gacgggtggg caaatctctga      420
tttccgtggg ggaatgtcat ggtcttgcct tactaagttt tgagactggc aggtagtga      480
actcattagg ctgagaacct tgtggaatgc acttgaccca scatgatagag gaagtagcca      540
ggtagggagc ttccccagtg ggtgtgggac atatctggca agattttgtg gcaactctgg      600
ctacagatar tggggcagca aataaaactg aatcttg                                                                 637

```

<210> 308

<211> 647

<212> DNA

<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(647)
 <223> n = A,T,C or G

<400> 308
 accgattttca ttatcccgta aatcggggtca ctcaaggggc caaccacagc tgggagccac 60
 tgcctcagggg aagggttcata tgggactttc tactgcccac gggtctctac aggatataaa 120
 gggngcctcac agtatagatc tggtagcaaa gaagaagaaa caaacactga tctctttctg 180
 ccaacccctct gaccctttgg aactcctctg accctttaga acaagcctac ctaatatctg 240
 cttagagaaaa gaccacaaca ggctcaaaag gatctcttac catgaagggtc tcaactaatt 300
 cttgggttaa atgtgggttc cacattaggt tctgaaatag gggggaagggt tcaatttgct 360
 catttttgtgt gtggatanaag tcaggatgac caggggcag agcagggggc tgccttgcttt 420
 gggaaacaatt gctgagcata taaccatagg ttatggggag caaaacaaca tcaaatgcac 480
 tgtatcaatt gccatyaaga cttgagggac ctgaatctac cgattcatct taaggcagca 540
 ggaccragttc gagtggcaac aatgcagcag cagaaatcaat ggaacaaca gaatgattgc 600
 aatgtccttc ttttctctct gcttctgact tgataaaagg ggaccgt 647

<210> 309
 <211> 460
 <212> DNA
 <213> Homo sapien

<400> 309
 actttatagt ttaggctgga cattggaaaa aaaaaaaggc cagaacacua tgtgatagat 60
 aatattgatg gctgcacant tccagactga tgaatgatga acgtgatgga ctattgtatg 120
 gagcacatct tcagcaagag ggggaattac tcatcatttt tggccagcag ttgtttgatc 180
 accaaacatc atgcccagaat actcagcaaa ccttctcagc tcttgagaag tcaaatgccg 240
 ggggaattta ttrctggcaa ttttaatttg aactcttatg tgagagcagc ggctaccacg 300
 ctgggggtgg ggaagcaacc cgtcactagt ggacatgcag tggcagagct cctggtaacc 360
 accragagga atacacaggc acatgttgtg tgccaagcgt gacacctga gcactcaaat 420
 ttgtcttggt tttgtcttc ggtgtgtaag attcttaagt 460

<210> 310
 <211> 539
 <212> DNA
 <213> Homo sapien

<400> 310
 accgggaactta tcaaatanaag ataggaaaag aagaaaactc aatatattata ggcaguantg 60
 ctaaagggttt taaatatgtt caggattgga agaaaggcatg gatanagaac aaggttcagt 120
 taggaaagag aacacacaga ggaagagaca caataaaagt cattatgtat tctgtgagaa 180
 gtcagacagt aagatttgtg ggaatgggt tgggttgttg tatggtatgt attttagcaa 240
 taatctttat ggcagagaaa gctaaaatcc tttagrttgc gtgaatgatc acttgctgaa 300
 ttcttcaagg taggcatgat gaaggagggt ttagaggaga cacagacaca atgaactgac 360
 ctagatagaa agccttatga tactcagcta ggaatagtga ttctgagggc aactgtgac 420
 atgattatgt cattacatgt atggtagtga tggggatgat aggaaggag aacttatggc 480
 atattttcac cccacaaaa gtcagttaaa tattgggaca ctaaccatcc aggtcaga 539

<210> 311
 <211> 526
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(526)

<223> n = A,T,C or G

<400> 311

caaattttag	ccaatgacat	agaattttac	aaatcaagaa	gcttattctg	ggggcatttc	60
ttttgacgtt	ttctctaaac	tactaaaggag	gcattaatga	cccataaatt	atattatcta	120
caattacagr	atttaaaatg	tgttcagcat	gaaatattag	ctacagggga	agctaaataa	180
attaaacatg	gantaagat	ttgtccctaa	atataatcta	caagaagact	tcgatatttg	240
tttttcacaa	gtgaagcatt	cttataaagt	gtcataacct	ttttggggaa	actatgggaa	300
aaaatgggga	aactctgaag	ggtttttaagt	atcctacctg	aagctacaga	ctccataacc	360
tctctttaca	gggagctcct	gcagccctta	cagaaatgag	tggctgagat	tcttgattgc	420
acagcaagag	cttctcctct	aaaccccttc	ccttttttagt	atctgtgtat	caagtataaa	480
agttctataa	actgtagtnt	acttatttta	atccccaaag	cacagt		526

<210> 312

<211> 500

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(500)

<223> n = A,T,C or G

<400> 312

ctctctctc	cccacccct	gactctagag	aactggggtt	cttccragta	ctccagcaat	60
tcatttctga	aagcagttga	gccactttat	tccaaagtac	actgcagatg	ctcaaaactct	120
ccatttctcc	ttcccttccc	cctgccagtt	ttgctgactc	tcaacttctc	atgagctgtaa	180
grattaaagg	catttatgctt	cttcgattct	gaagacaggc	cctgctcatg	gatgactctg	240
gottcttagg	aaataatttt	tcttccaaaa	tcagtaggaa	atctaaactt	atccctcttt	300
tgcagatgtc	tagcagcttc	agacatttgg	ttangaacct	atgggaaaaa	aaaataacct	360
tgtcaatgng	gtttcctttg	taaaccaaga	ttcttatttg	ncgtgtatag	aatatcagct	420
ctgaacgtgt	ggtaagatt	cttctgtttg	aatataggag	aaatcagttt	gctgaagaagt	480
tagtcttaat	tatctatcgg					500

<210> 313

<211> 718

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(718)

<223> n = A,T,C or G

<400> 313

ggagatttgt	gtgggtctgca	gccgagggag	accaggaaga	cttgcattgt	gggaaggacc	60
tgatgataca	gaggtgagaa	ataagaaaag	ctgctgactc	tacctatcta	ggccacacac	120
ctgctgaagt	ggagataatt	aacatcacta	gaaacagcaa	gatgacenta	taattgtctaa	180
gtagtgaat	gtttttgcac	atctccagcc	cttttaata	ccacacaca	caggaaagcac	240
aaaagggaagc	acagagatcc	ctgggagaaa	tggccggccg	ccatcttggg	tcattcgatga	300
gcctcgccct	gtgccttntc	ccgcttctga	gggaaggaca	ttagaaaatg	aattgatgtg	360
ttcccttaag	gatggcagga	aaacagatcc	tgttgcggat	atctatttga	acgggatctc	420

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agatttggaa tgaagtcaca aagtgaagrat taccaatgag agggaaaacag acgggaaaat      480
cttgatgggt cacaagacat gcaacaaaca aaatgggata ctgtgatgac acgagcagcc      540
aacctggggag gagataccac ggggcagagg tcaggattct ggcctctgctg cctaaactgtg      600
cgttatacca atcatttcta tttctacctt caaacaagct gtngaataac tgacttaagg      660
ttcttntggc ccaattttc atnatccacc cctctntttt aannttantc caaantgt      718

```

<210> 314

<211> 358

<212> DNA

<213> Homo sapien

<400> 314

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gtttatttac attacagaaa aacatcagag acaatgtata ctatttcaca tatatccata      60
cataatcaca tatagctgta gtacatgttt tcattgggtgt agattaccac aaatgcaggg      120
caacatgtgt agatctcttg tcttatttct ttgtctataa tactgtattg ttagtccaa      180
gtctctggtg gtccagccac tgtgaacacat gtcctcttta gattaaacctc gtggacgttc      240
ttgtctgtat gctgaactgt agtgccctgt attttgcttc tgtctgtgaa ttctgttgc      300
tctggggcat tctcttgtga tgcagaggac caccacacag atgacagcaa tctgaatt      358

```

<210> 315

<211> 341

<212> DNA

<213> Homo sapien

<400> 315

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taccacctcc ccgtgggac tgatgagtcg catcaccatg gtcaccagca ccattgaaggc      60
ataggtgatg atgaggacat ggaatgggac cccaaggatg gctgtccaa agagcgaggt      120
gacccccatt ctgaagatgt ctggaaacct taccagcagg atgatgatg cccaatgac      180
agtccaccagc tcccagacca gccggatata gtccttaggg gtcattgtag ctccctgaag      240
tagcttctgc tgaagagggg tgttgctccg ggggctctgt cgggtattgg tctgggctt      300
gagggggcgg tagatgcagc acatggctgaa gcagatgatg t      341

```

<210> 316

<211> 151

<212> DNA

<213> Homo sapien

<400> 316

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agactgggca agactcttac gccccacact gcaatctggc ctgtgtgccc tatccattta      60
tgtgggcttt tctcagattt ctgattataa acaccactgg agcgatgtgt tgactggact      120
cattcagggg gctctgggtt caatatctagt t      151

```

<210> 317

<211> 151

<212> DNA

<213> Homo sapien

<400> 317

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agaactagtg gatcccaatg aaataacctg aacatatatt ggcatttata aatggctcaa      60
atcttcattt atctctggcc ttaaccttgg ctcttgaggc tgcggccagg agatcccagg      120
ccagggtctt gttcttgcca caactgcttg a      151

```

<210> 318

<211> 151

<212> DNA

107

<213> Homo sapien

<400> 318

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actggtggga ggcgctgtt agttggctgt tttcagaggg gtctttcggg gggacctctt    60
gtgcagagct ggagtgctct tattctctggc gggagaccgc acattccact gctgaggctg    120
tgggggcggg ttatcaggca gtgataaaca t                                     151

```

<210> 319

<211> 151

<212> DNA

<213> Homo sapien

<400> 319

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aactagtggg tccagagcta taggtacagt gtgatctcag ctttgcraac acatcttcta    60
catagctagt actaggtatt aatagatatg taagagaaaga aatcacacca ttaataatgg    120
taagattggg ttatgtgat tttagtgggt a                                     151

```

<210> 320

<211> 150

<212> DNA

<213> Homo sapien

<400> 320

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aactagtggg tccactagtc cagtgtgggt gaattccatt gtgttggggg tctagatcgc    60
gagcggctgc cctttttttt tttttttttg ggggggaatt tttttttttt aatagttatt    120
gagtgttcta cagcttacag taaatccat                                     150

```

<210> 321

<211> 151

<212> DNA

<213> Homo sapien

<400> 321

```

agcaactttt tttttcatcc aggtatcttt aggccttagg tttctcttca caatgcagtt    60
tagggtggca ttgtaccag ctatggcata ggtgttaacc aaaggctgag taacatggg    120
tgctctgag aatcaaatg ctcatacac t                                     151

```

<210> 322

<211> 151

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1) ... (151)

<223> n = A, T, C or G

<400> 322

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atcagcctc tctcctgtt tcttgcttc cttttcttc ttcttasatt ctgcttgagg    60
tttgggcttg gtcagtttg cacagggtt ggagatggcg acagtcttct ggcattcggc    120
attgtgcagg gtcgcttca nacttcragt t                                     151

```

<210> 323

<211> 151

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(251)

<223> n = A,T,C or G

<400> 323

tgaggacttg tktttctttt ctttattttt aatcctctta ckttgtaa atatttgcta	60
nagactrant taactnccag ttgtgggtt twtgggagaa atgtaactgg acagttagct	120
gttcaatyna aaagacactt ancccatgtg g	151

<210> 324

<211> 461

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(461)

<223> n = A,T,C or G

<400> 324

acctgtgtgg aatttcagct ttctcatgc aaagagatrt tgtatccccg gctacttga	60
agaagtggc agctaaagga atccaggttg ttggttgga cgttaataac ttgatgaaa	120
eyagttacta cgaatcccat cttggttcca gctatatcac tgacagcatg gtagaagact	180
gcgaacctca cttctagat ttacaggttg gacgaacagg gticagaaac tgccaggggc	240
ctcatcacgg gatataaaa taccctttgt gctaccaggg cctgggggaa ttaggtgact	300
caracaaatg caatagtttg cactgcatt ttacctgaa ccaaaagtaa acccgggtgt	360
gccaccatgc accatggcat gccagagttc aaactgtgtg ctcttgaaaa ttaggtctga	420
aaaaacgcac aagagccct gccctgccc agctganga c	461

<210> 325

<211> 400

<212> DNA

<213> Homo sapien

<400> 325

acaactgttc catgttatgt ttctacacat tgctacctca gtgcccctgg aaacttagct	60
tttgatgtct ccaagtatgc cacttccatt taactctttg aaactgtatc atctttgcca	120
agtaagagtg gtggcctatt tcaactgttt tgacaaaatg actggctcct gacttaacgt	180
ctataaatg aatgugctga agcaaatg ccatggctgg ggcgaagaag agaaagatgt	240
gttttgtttt ggactctctg tggtrccttc caatgctgtg ggtttccaac caggggaggg	300
gtcccttttg catgccaag tgcataaac atgagcacta cgtaccatg gtcttgcctc	360
ctggccaagc aggtgtgttt gcaagaatga aatgaatgat	400

<210> 326

<211> 1215

<212> DNA

<213> Homo sapien

<400> 326

ggaggactgc agccgcact cgcagccctg gcaggcgga cttgtcatgg aaaaagaa	60
gttctgtctg ggcgtcttg tgcatacga gtgggtgttg tcaagccgac actgtttcca	120
gaactctac accatcggtc tgggcttgca cagtcttgag gccgaccaa agccaggag	180

```

ccaghtggtg gaggcagac tctcagtag gcacccagag tacaacagac ccttgcgcgc 240
taacgaccc atgctcatca agttggagca atccgtgtcc gactctgaca ccatccggag 300
catcagcatt gcttcgcagt gccctaccgc ggggaactct tgcctcgctt ctggtctggg 360
tctgctggcg aacggcagaa tgcctaccgt gctgcagtgc gtgaacgtgt cgggtggtgtc 420
tgaggaggtc tgcagtaagr tctatgaccc gctgtaccac ccagcctgt tctgcgcgg 480
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aggtgtctac acraacctct gcaaatcac tgagtggata gaggaaaccc tccaggccag 660
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tcaggaatat ctgttcccag cccctcctcc ctgaggccca ggaagccagg cccccagccc 780
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acagtgcctc ctgtggcag gtgacccaa ccttaacagt tgggttttca tttttgtcc 1140
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aaaaaa aaaa
1215

```

<210> 327

<211> 220

<212> PRT

<213> Homo sapien

<400> 327

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Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met
1 5 10 15
Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val
20 25 30
Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly
35 40 45
Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu
50 55 60
Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu Ala
65 70 75 80
Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser Asp
85 90 95
Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly Asn
100 105 110
Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met Pro
115 120 125
Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu Val Cys
130 135 140
Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala Gly
145 150 155 160
Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly Pro
165 170 175
Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys Ala
180 185 190
Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu Cys Lys
195 200 205
Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
210 215 220

```

<210> 328

<211> 234
 <212> DNA
 <213> Homo sapien

<400> 328

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agccctygca	ggcggcactg	gtcatggaaa	arganttgtt	ctgctcgggc	gtcttggtgc	120
atcgcagtg	ggtgctgtca	gccacacact	gtttccagaa	ctctacacc	atcgggctgg	180
gcctgcacag	tcttgaggcc	gaccaagagc	caggagacca	gatggtggag	gcca	234

<210> 329
 <211> 77
 <212> PRT
 <213> Homo sapien

<400> 329

Leu	Val	Ser	Gly	Ser	Cys	Ser	Gln	Ile	Ile	Asn	Gly	Glu	Asp	Cys	Ser
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Pro	His	Ser	Gln	Pro	Trp	Gln	Ala	Ala	Leu	Val	Met	Glu	Asn	Glu	Leu
			20				25						30		
Phe	Cys	Ser	Gly	Val	Leu	Val	His	Pro	Gln	Trp	Val	Leu	Ser	Ala	Thr
		35					40					45			
His	Cys	Phe	Gln	Asn	Ser	Tyr	Thr	Ile	Gly	Leu	Gly	Leu	His	Ser	Leu
	50				55					60					
Glu	Ala	Asp	Gln	Glu	Pro	Gly	Ser	Gln	Met	Val	Glu	Ala			
65					70					75					

<210> 330
 <211> 70
 <212> DNA
 <213> Homo sapien

<400> 330

cccaacacaa	tggcccgatc	ccatccctga	ctccggcctc	aggatcgctc	gtctctggta	60
gctgcagca						70

<210> 331
 <211> 22
 <212> PRT
 <213> Homo sapien

<400> 331

Gln	His	Asn	Gly	Pro	Ile	Pro	Ser	Leu	Thr	Pro	Pro	Ser	Gly	Ser	Leu
1				5				10					15		
Val	Ser	Gly	Ser	Cys	Ser										
			20												

<210> 332
 <211> 2507
 <212> DNA
 <213> Homo sapien

<400> 332

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gtacatcaac	tggtcagctt	cctgggaag	tagt.tgtggt	cacaggagct	aatncaggta	180
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gcttcottagc	tgaggaaaag	caectccacg	ttttgatcaa	caatgcagga	gtgatgatgc	420
gtccgtactc	gaagacagca	gatggctttg	agatgcacat	aggagtcaac	cacttgggtc	480
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aaaaaanaaa	aaaaatccta	aaaacaaaca	aacaaanaaa	acaaatcttc	atccagaaaa	1980
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<210> 333

<211> 3030

<212> DNA

<213> Homo sapien

<400> 333

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<210> 334

<211> 2417

<212> DNA

<213> Homo sapien

<400> 334

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<210> 335

<211> 2984

<212> DNA

<213> Homo sapien

<400> 335

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<210> 336

<211> 147

<212> PRT

<213> Homo sapien

<400> 336

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Pro	Lys	Gln	Pro	Gln	Lys	Arg	Ser	Arg	Ala	Ala	Phe	Ser	His	Thr	Gln
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Pro	Glu	Arg	Ala	His	Leu	Ala	Lys	Asn	Leu	Lys	Leu	Thr	Glu	Thr	Gln
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 Ala Phe Trp
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<210> 337
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 <212> PRT
 <213> Homo sapien

<400> 337
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<210> 338
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<210> 339
 <211> 318
 <212> PRT
 <213> Homo sapien

<400> 339
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 Cys Thr Ser Thr Val Gln Leu Pro Gly Lys Val Val Val Val Thr Gly
 35 40 45
 Ala Asn Thr Gly Ile Gly Lys Glu Thr Ala Lys Glu Leu Ala Gln Arg
 50 55 60
 Gly Ala Arg Val Tyr Leu Ala Cys Arg Asp Val Glu Lys Gly Glu Leu
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 Val Ala Lys Glu Ile Gln Thr Thr Thr Gly Asn Gln Gln Val Leu Val
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 Arg Lys Leu Asp Leu Ser Asp Thr Lys Ser Ile Arg Ala Phe Ala Lys
 100 105 110
 Gly Phe Leu Ala Glu Glu Lys His Leu His Val Leu Ile Asn Asn Ala
 115 120 125
 Gly Val Met Met Lys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Met
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 His Ile Gly Val Asn His Leu Gly His Phe Leu Leu Thr His Leu Leu

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Thr	Glu	Gly	Leu	Glu	Ile	Leu	Ser	Gly	Asn	His	Phe	Ser	Asp	Cys	His
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Val	Ala	Trp	Val	Ser	Ala	Gln	Ala	Arg	Asn	Glu	Thr	Ile	Ala	Arg	Arg
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<210> 340

<211> 483

<212> DNA

<213> Homo sapien

<400> 340

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<210> 341

<211> 344

<212> DNA

<213> Homo sapien

<400> 341

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<210> 342

<211> 592

<212> DNA

<213> Homo sapien

<400> 342

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<210> 343

<211> 382

<212> DNA

<213> Homo sapien

<400> 343

ttcttgacct	cctcttctt	caagctcaca	caccacctcc	cttattcagg	acgggcactt	60
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cttgraactc	tcttttctc	ttctctccc	ttctctgcr	cggcttccc	atcctgctgt	180
agacttcttg	attgtcagtc	tygtcacat	caagtgatcg	ttttggttcc	tgcttcttct	240
ctgactgccc	aaggggctca	gaaccccagc	aatccccccc	tctcaatccc	ttcttttttg	300
ggggtagttg	gaagggaactg	aaattgtggg	gggaaggcag	gaggcacatc	antaaagagg	360
aaaccaccac	gctgaaaaaa	aa				382

<210> 344

<211> 536

<212> DNA

<213> Homo sapien

<400> 344

ctgggcccga	agctgtagg	tcaatcagag	gcaggcttct	gagtgatgag	agtcctgaga	60
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gtttaggggg	atgccaaagg	taaggccagc	tcagttatat	gaagagaaag	agaaacaaaca	180
agtccttcag	agaaatggat	gcaatcagag	tgggatcccg	gtcacatcan	ggtcacactc	240
caccttcatg	tgcctgaaag	gttgcraggt	cagaaaaatc	caccccttac	gagtgcgggt	300
tcgaccttac	atcccccgc	cgcgtccctt	tctccataaa	attcttctta	gtagctatta	360
ccttcttatt	atttgatcta	gaaattgccc	tccctttacc	cctaccatga	gcccacaaa	420
caactaacct	gccactaata	gttatgtcat	ccctcttatt	aatcatcctc	ctagccctaa	480
gtctggccta	tgagtgacta	caaaaaggat	tagactgagc	cgaataacaa	aaaaaa	536

<210> 345

<211> 251

<212> DNA

<213> Homo sapien

<400> 345

accttttgag	gtctctctca	ccacctccac	agccaccgtc	accgtgggat	gtgctggatg	60
tgaatgaagc	ccccatcttt	gtgctcctg	aaaagagagt	ggaggtgtcc	gaggactttg	120
gcgtggggcc	ggaaatcaca	tcttactg	cccaggagcc	agacacattt	atgggaacaga	180
aaataacata	tcggatttgg	agagacactg	ccaactggct	ggagattaat	cgggacactg	240
gtgcccatttc	c					251

<210> 346
 <211> 282
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{282}
 <223> n = A,T,C or G

<400> 346
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 ctaagtcttg ttaccannn aaggaaaaag aaaaagatctt ctcagttaca atttctggga 120
 agggagacta taactggctc ttgccctaag tgagagggtt tccctccagg accaaaaaat 180
 agaaaggctt tctatttcac tggccagggt aggggggaagg agagtaactt tgagctcttg 240
 ggtctcattt cccaagggtc ctccaatgct catnaaaacc aa 282

<210> 347
 <211> 201
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{201}
 <223> n = A,T,C or G

<400> 347
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 taatatatac tcttaaaana ttactancaa cttttaccta agctcctaaa tgccttgtaa 120
 tctgagactg actggaccca cccagaccca gggcaagat acatgttacc atatcatctt 180
 tataaagaat tttttttctg c 201

<210> 348
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 348
 ctgttaatca caacatctgt gcacacattg tggcaagtga gaaaatgttc taanaatcaca 60
 agagagzaca gtgccagaat gaaactgacc ctaagtccca ggtgcccctg ggcaggcaga 120
 aggagacact cccagcatgg aggaggggtt atcttttcat cctagggtcag gtctaraatg 180
 ggggaggggt ttattataga actcccaaca gccacctca ctctgcccac ccaccggatg 240
 gccctgectc c 251

<210> 349
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 349
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 aacccctggg gatgccagag ctatgggtcc agaacatggg gtgggtattat caacagagtt 120
 cagaagggtc tgaactctac gtgttaccag agaacntaat gcaattcatg cattccactt 180
 agcaattttg taanaatcaa gaaacagacc ccagaggtct ttcaagatga ggaanaatca 240

actccttggtt t

251

<210> 350

<211> 908

<212> DNA

<213> Homo sapien

<400> 350

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agcccgcccg	gtgaagctcg	ctgcttcccc	tacctcctta	agtgactgcc	aaacgcccac	120
cggctggagc	tgctccggtt	atgatgacag	agaaaatgat	ctcttccctt	gtgacaccaa	180
cacctgtaaa	tttgatgggg	aatgttttaag	aattggagac	acctgtgact	gcgtctgtca	240
gttcaagtgc	aacaatgact	atgtgcctgt	gtgtggcttc	aatggggaga	gctaccagaa	300
tgagtgttac	ctgcgacagg	ctgcctgcaa	acagcagagt	gaggtacttg	tggtgtcaga	360
aggatcatgt	gccacagtc	atgaaggctc	tggagaaact	agtcaaaagg	agacatccac	420
ctgtgatatt	tgcagtttct	gtgcagaaatg	tgacgaagat	gccgaggatg	tctgggtgtgt	480
gtgtaatatt	gactgtttct	aaaccaactt	caatcccttc	tgcgcttctg	atgggaaatc	540
ttatgataat	gcattgcaaa	tcaaaagaagc	atcgtgtcag	aaacaggaga	aaattgaagt	600
catgtctctg	ggctgatgtc	aagataaacac	aactacnacc	actaagtctg	atgatgggca	660
ttatgcanga	ccgatttatg	cagagaatgc	taccaaattc	gaagaaagtg	ccagagaaca	720
ccacataact	tgtccggaac	attacaatgg	cttctgcctg	catgggaagt	gtgagcattc	780
tatcaatatg	caggagccat	cttgcagggtg	tgatgcttgt	tatactggac	aacctgtga	840
aaaaaaggac	tacagtgttc	tatacgttgt	tccnggtctt	gtacgakttc	agtatgtctt	900
aatgcag						908

<210> 351

<211> 472

<212> DNA

<213> Homo sapien

<400> 351

ccagttattt	gcaagtggtg	agagccctatt	taccataaat	aatactaaga	acraactcaa	60
gtcaaacctt	aatgccattg	ctattgtgaa	ttaggattaa	gtagtaattt	tcaaaattca	120
catlaacttg	attttaaaa	cagwtctgyg	agtcattta	cacaagctaa	atgtgtacac	180
tatgataaaa	acaaccattg	tattccctgtt	tctctaaaca	gtcctaattt	ctaaactgtt	240
atatatcttt	cgacatcaat	gaactttgtt	tctttttact	ccagttaata	agtaggcaca	300
gactcttcca	caacaacttc	gccctctcat	gccctgcctc	tcaccatgtt	ctgctccagg	360
tcagccctct	tttggcctgt	ttgttttctc	aaaaacctaa	tctgcttctt	gcttttcttg	420
gtcaatatata	tttaggggaag	atgtctgctt	gcccaacac	gaagcaagtc	aa	472

<210> 352

<211> 251

<212> DNA

<213> Homo sapien

<400> 352

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tgtggataag	gccaggtcaa	tggctgcaag	catgcagaga	aagaggtaaa	tcggagcgtg	120
caggctgctg	tccgtcctta	cgatgaagac	cacgatgcag	tttccaaaca	ttgccactac	180
atacatggaa	aggagggggg	agccaaacca	gaatgggtct	ttctctaatt	ctgggatacc	240
aataagcaca	a					251

<210> 353

<211> 436

<212> DNA

<213> Homo sapien

<400> 353

tttttttttt	tttttttttt	tttttttttt	caatgcagtc	atcttttttt	tgagtatgtg	60
cacatttatg	tatttttttt	atactgatta	tatttttatc	gtgactttta	atttataaat	120
gtatucaaaa	gcataaacagc	agatatataa	aatttaagag	acagatagata	garatttaaa	180
gataaaggcaa	tttatucatt	gacattccaa	atccaatata	tttaaacatt	tgaggaaatga	240
gggggacaaa	tggaagccar	atcaattttg	tgtaaaacta	ttcagtatgt	ttcccttgc	300
tcattgtctg	raaggctctc	ccttcaatgg	ggatgacaaa	ctccaaatgc	cacataaatg	360
tttaacagaat	actagatcca	cactggaaac	gggtcaaaag	agaaattatt	ttctataaaa	420
gggctcctaa	tgtagt					436

<210> 354

<211> 854

<212> DNA

<213> Homo sapien

<400> 354

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atcagggaacc	accctttggg	tcgatatttt	gcttaattctg	cattctttga	gtatagatcat	180
ctggcugtag	aagctgttct	ccaggtacat	ttctctagct	caggtacaaa	aactatctga	240
aggactttgt	caggtgcctt	gctaaaaagc	agatgcgttc	ggcacttcc	tggtctgagg	300
tttaattgcac	acctacaggc	actgggctca	tgctttcang	talcttctgc	tcacttttagg	360
gtgagtgaaa	gatccccact	ataggagcnc	ttgggngaga	tcataataaa	gctgacttct	420
gaqtacatgc	agtaattggg	tagatgtgtg	tggtgtgtct	tcattctctg	aaagggtgct	480
gttagggagt	gtttcccgga	gggaacagtc	tgaaaccaat	cattgaataa	atgggtgggt	540
tgaaactggaa	aactaartca	aaagagagat	cgtgatatac	gtgtggttga	tacaccttgg	600
caataatggaa	ggctctaatt	tgcccatatt	tgaaataata	attcagcttt	ttgtaataca	660
aaataacaaa	gyattgagaa	tcattgtgtc	taattgtataa	aagatccagg	aaacttaaat	720
atataaactc	cataaatgta	aaatgcattg	gacctaaaga	ggccccaag	tgacagacaa	780
catctgtacc	attttccctt	ccaaatgtg	agcggcgagg	ctgctgtttt	caagggtctc	840
acacgggagt	tcag					854

<210> 355

<211> 676

<212> DNA

<213> Homo sapien

<400> 355

gaaatttaagt	atgagctaaa	ttccctgtta	aaacctctag	gggtgacaga	ttctttcaac	60
cagggtcaag	ctgatctttc	tggaatgtca	ccaaccaggg	gcctatattt	atcaaaagcc	120
atccucaagt	cataacctga	tgctagcgaa	gagggtacgg	aggcagcagc	agccactggg	180
garagcatcg	ctgtaaaaag	cctaccaatg	agagctcagt	tcaaggcgaa	ctaccctttc	240
ctgttcttta	taaggacac	tcataaccaac	acgatcttat	tctgtgacaa	gcttgccctt	300
ccctaattcag	atgggggttg	gtaaaggctca	gagtggcaga	tgagggtgag	agacaattct	360
gtgactttcc	cacggccaaa	aagctgttca	cauctcaagc	acctctgtgc	ctcagcttgc	420
tcattctgaa	aactaggtcta	ggatttcttc	caaccatttc	atgagctgtg	aaagctaaggc	480
tttgttaatc	atggaaadaag	gtagacttat	gcagaaagcc	tttctggctt	tccttatctgt	540
gggtgtctcat	ctgagtgctg	tcagtgaca	tgatcaagtc	aatgagttaa	atttcaaggg	600
attagatttt	ctgacttgc	atgtatctgc	gagatcttga	ataagtgaac	tgacatctct	660
gcttaagaaa	aaccag					676

<210> 356

<211> 574

<212> DNA

<213> Homo sapien

<400> 356

tttttttttt	tttttcaggga	aaacattctc	ttactttatt	tgcattctcag	caaaggttct	60
catgtggcac	ctgactggca	tcaaaacaaa	gttcgtaggc	caacaaagat	ggggccactca	120
caagettccc	atttcttagat	ctcagtgcct	atgagtatct	gacacctgtt	ctctctttca	180
gtctcttagg	gaggctttaa	ctctgtctcag	gtgtgctaag	agtgcacgcc	caaggkgttc	240
aaaagtccac	aaaactgcag	tctttgctgg	gatagttaagc	caagcagtgc	ctggacagca	300
gagttctttt	cttgggcaac	agataaccag	acaggactct	aatcgtgctc	ttattcaaca	360
ttctctctgtc	tctgcctaga	ctggaataaa	aagccaatct	ctctcgtggc	acagggaagg	420
agatacaadgc	tcgtttacat	gtgatagatc	taacaaaggc	atctaccgaa	gtctggtctg	480
gatagacggc	acaggggagct	cttaggtcag	cgctgctggc	tggaggacat	tcctgagtc	540
agctttgcag	cctttgtgca	acagtacttt	cccc			574

<210> 357

<211> 393

<212> DNA

<213> Homo sapien

<400> 357

tttttttttt	tttttttttt	tttttttttt	tacagaatat	aratgcttta	tcactgkaet	60
taatatggkg	kottgttccac	tatactttaa	aatgtaccac	tcataaatat	ttaatccagc	120
aagccacnac	caaxacttga	ttttatcaac	aaaaacccct	aatatataac	ggaaaaaaag	180
atagatataa	ttattccaqt	ctttttaaam	cttaaaaarat	attccattgc	cgaatttaara	240
araaratang	tggttatatgg	akagaagggc	attcaagcac	actaaaraaa	cctgaggkaa	300
gcataatctg	tacnaaattt	aactgtcctt	tttggcattt	taacaaattt	gcaacgktct	360
tttttttctt	cttctgtttt	tttttttttt	tac			393

<210> 358

<211> 630

<212> DNA

<213> Homo sapien

<400> 358

acagggttaa	caggaggatc	cttgcctctca	cggagcttac	attctagcag	gaggacaata	60
ttaatgttta	taggaanaatg	atgagtttat	gacaazggaa	gtagatagtg	ttttacaaga	120
gcataagata	gggaagctaa	tccagracag	ggaggtcaca	gagacatccc	taagggaagtg	180
gagttttaaa	tgagaggaagc	aagtgcctaa	actgaaggat	gtgttgaaga	agaaggggaga	240
gtagaacaat	ttgggcagag	ggaaccttat	agacctaaag	gtgggaagggt	tcaaaagaact	300
gaaagagagc	tagaaccagct	ggagcrrgttc	tcoggtgtaa	agaggaggtca	aagagataag	360
attaaagatg	tgaagattaa	gatcttgggtg	gcattcaggg	attggcactt	ctacaagaaa	420
tcactgaagg	gagtaatgtg	acattacttt	tcattcagg	atggcattc	taactccagg	480
gggtagactg	gactaggtaa	gactggaggc	aggtagacct	cttctaaggc	ctgcgatagt	540
gaaagacaaa	aataagtggg	gaaattcagg	ggatagtgaa	aatcagtagg	acttaatgag	600
caagccagag	gttctctcac	aaacaaccagt				630

<210> 359

<211> 620

<212> DNA

<213> Homo sapien

<400> 359

acagcattcc	aaatatata	tctagagact	aaarrgtaaa	gctctatagt	gaagaggtaa	60
taattcaaaa	atgtactaa	tatagaaaat	ttataatcag	aaaaataaat	attcaggagg	120

ctccacagaa gaataaagtg ctctgccagt tattaagggg ttactgctgg tgaattaaat	180
atggcattcc ccaagggaag tagagagatt ctctcggatt atgttcaata tttatttacc	240
aggattcaact gtcttaggaa cagatataaa gcttcggcac ggaagagatg gacaaagcac	300
aaagacaaca tgatacctta ggaagcaaca ctacccttcc aggcataaaa tttggagaaa	360
tgcaacatta tgcctcatga ataataatga gaaagaaggc ctgatgaaa tgacatcctt	420
aatgtaaagt aactttataa gaattctggg tcaaataaaa tcttttgaa gaaacatcca	480
aatgtcattg aattatcaga tacttatctg gcataataac tatgaaggca aaactaaaac	540
aaacaaagac tcacacaaaa caaaaccatc aacttatttt gtattctata acatacagga	600
ctgttaagat gtgacagctg	620

<210> 360

<211> 431

<212> DNA

<213> Homo sapien

<400> 360

aaataaaaaa agccagauca acatgtgata gataatatga ttggctgcac acttccagac	60
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tactaatcat ttttggccag cagtgttttg atcaccuac atcatgccag aatartcagc	180
aaactttctt agctcttgag aagtcaaat ccgggggaat ttatccttgg caattttaat	240
tggactcctt atgtgagagc agcggctacc cagctggggg ggtggagcga acccgtaact	300
agtggacatg cagtggcaga gctccttgta accacctaga ggaatacaca ggcacatgtg	360
tgaatccaaag cgtgacacct gtgacactca aatttgtctt gtttttgcct ttcggcgtgt	420
agattcttag t	430

<210> 361

<211> 351

<212> DNA

<213> Homo sapien

<400> 361

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ttgggtcctc tggctctctg ccaagtcttc cagccactcg agggagaaat atcgggaggt	180
ttgacttctt ccggggcttt ccgaggggct tcccggtgag ccttgccgac ctcagggctg	240
caaccctgga ttcaatgtct gaaacctcgc tctctgcttg ctggacttct ggggcggtca	300
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<210> 362

<211> 463

<212> DNA

<213> Homo sapien

<400> 362

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tgcagatgag ccggtctgaag atcttgccga tgcgcggctt cagggcgaag tcttggcgc	120
ccccggtcac agaaatgacg aggttgggtg ttttcaggtg ccagtactgg gtcagcagct	180
cgtaaaggat ttcgcgctcc gtgtcgcagg acagacgtat atacttccct tcttcccca	240
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agttccattt ctcacttttg ttgatctggg tgccttccat gtgtggctc tgggcatagc	360
caracttgca cacattctcc ctgataagca cgtatggtgt gacagggaag aaggatttca	420
ctgagcctgc ttatggaaac tggatattgt agcttaaacg gar	463

<210> 363

<211> 653

<212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)... (653)
 <223> n = A,T,C or G

<400> 363

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ctcttgngga	ttctgggtga	cattcttcatg	aatggcaacg	gtgccagwga	ggctgtcttc	120
tgggaggrac	tacgcaagat	gggactgcgt	cctggggtga	gacatcctct	ccttggagat	180
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atcttggaga	tccntggtcc	agaattccat	ttaccttctg	ggccagatac	caccagatg	600
cccgtccag	attccctcag	acctttgcgc	gtcccattat	tggtcstggg	ggc	653

<210> 364
 <211> 401
 <212> DNA
 <213> Homo sapien

<400> 364

actagaggaa	agacgttaaa	ccactctact	accanttgctg	gaactctcaa	agggttaastg	60
acaaggccaa	tgaatgactc	taaaaacaat	atttaratlc	aatggtttgt	agacaataaa	120
aaaacaaggt	ggaatagatct	agaattgtaa	cattttbaaya	aaaccatagc	atttgacaga	180
tgagaaagct	caattacaga	tgcaagttta	taactaaact	actatagtag	taaagaaata	240
catttcacac	ccctcatata	aattcactat	cttggcttga	ggcactccat	aaaatgtatc	300
acgtgcatag	taaatcttta	tatttgctat	ggcgttgcac	tggaggactt	ggactgcacac	360
agtggtatgc	guggaazaatg	aaatcttctt	caatagccca	g		401

<210> 365
 <211> 356
 <212> DNA
 <213> Homo sapien

<400> 365

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atgtttcagt	gctagagcgt	aggaatagac	cctggcgctc	actgtgagat	gttcttcagc	120
taccagagca	tcaagtctct	gcagcaggtc	attcttgggt	aaagaaatga	cttccacaaa	180
ctctccatcc	cctggctttg	gcttcgggct	tgcgttttcg	gcattcatct	cgtaaatggt	240
gactgtcacg	atgtgtatag	tacagtttga	caagcctggg	tccatcacaga	ccgttggaga	300
acattcggca	atgtuccctt	tgtagccagt	ttcttctctg	agctcccgga	gagcag	356

<210> 366
 <211> 1851
 <212> DNA
 <213> Homo sapien

<400> 366

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cttccggtgtt	cttccatctctt	cttccaatagc	catataatctt	ctagctctgg	ctgggtgttt	120
tcacttctct	taagccttct	tgactcttcc	tcctgatgta	gcttcaagtc	ttgttctgga	180
ttgctgtttt	cugaagagat	ttttaacatc	tytttttctt	tgtagtcaga	aagtaactgg	240
caaatctacat	gatgatgact	agaaacagca	cactctctgg	ccgtcttctc	agatcttgag	300
aagatcacatc	aacattttgc	ccaagtagag	ggctgactat	acttgctgat	ccacaacata	360
cagcaagtat	gagagcagtt	cttccatctc	tatccagcgc	atttcaatcc	gctttttctt	420
tgattaaaaa	tttccacact	tgctgttttt	gctcatgtat	accgaagtagc	agtgggtgtga	480
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<210> 367

<211> 664

<212> DNA

<213> Homo sapien

<400> 367

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gagtggtatt	tcctatactca	tctggaaatc	tcggatcagt	gccatgttcc	agcaacatta	240
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gcagtcctat	gagagtgaga	agacttttta	ggaaattgta	gtgcactagc	cacagccata	600
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<210> 368

<211> 1512

<212> DNA

<213> Homo sapien

<400> 368

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tccatgcccg	ctgcttcttc	tgtgaagaag	ccatttgggt	tcaggagcaa	gatgggcaag	300
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<210> 369

<211> 1853

<212> DNA

<213> Homo sapien

<400> 369

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<210> 370

<211> 2184

<212> DNA

<213> Homo sapien

<400> 370

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<210> 371
 <211> 1855
 <212> DNA
 <213> Homo sapien

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 <223> n = A,T,C or G

<400> 371
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<210> 372
 <211> 1059
 <212> DNA
 <213> Homo sapien

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<210> 373

<211> 1155

<212> DNA

<213> Homo sapien

<400> 373

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<210> 374

<211> 2000

<212> DNA

<213> Homo sapien

<400> 374

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<210> 375

<211> 2040

<212> DNA

<213> Homo sapien

<400> 375

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ctcagggaca	ctgacgtgaa	caagaaggac	aagcaaaaga	ggactgctct	acatctggcc	540
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gtcagccttc	tacttgagca	aaatattgat	gtatcttctc	aagatctatc	tggacagacg	1020
gccagagagt	atgctgttct	tagtcatcat	catgtaattt	gccagttant	ttctgactac	1080
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gaaatgaaga agracgggaag tactcatgtc ggattccag aaaaacctgac taatgggtgrr 1680
actgctggca atgggtgatga tggattaatt cctccaaggg agagcagaac acctgaagc 1740
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aagcaatttt gtgaagaaca gaacactgga atattacacg atgagattct gattcatgaa 1860
gaaaagcaga tagaagtggg tgaaaaaatg aattctgagc ttctctcttag ttgtaagaaa 1920
gaaaaagaca tcttgratga aaatagtarg ttgcggggaag aaattgcat gctgaagactg 1980
gagctagaca caatgaadaca tcagagccag ctaaaaaanaa aaaaaaanaa aaaaaaanaa 2040

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<210> 376

<211> 329

<212> PRT

<213> Homo sapien

<400> 376

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Glu Tyr Thr Ile Val His Ala Ser Phe Ile Ser Cys Ile Ser Ser Ser
 35          40          45
Leu Asp Gly Gln Gly Glu Arg Gln Glu Gln Arg Gly His Phe Trp Arg
 50          55          60
Pro Gln Arg Leu Leu Cys Glu Asp Ala Trp Glu Gln Glu Val Gln Val
 65          70          75          80
Val Leu Pro Leu Leu Pro Leu Leu Gln Gly Ser Gly Lys Ser Asn Val
 85          90          95
Val Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe Met Asp Pro Arg Tyr
100          105          110
His Val His Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp
115          120          125
Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp
130          135          140
Val Asn Lys Arg Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser
145          150          155          160
Ala Asn Gly Asn Ser Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys
165          170          175
Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala
180          185          190
Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly
195          200          205
Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr
210          215          220
Ala Val Tyr Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr
225          230          235          240
Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu
245          250          255
Leu Gly Ile His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys
260          265          270
Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu
275          280          285
Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu

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[illegible]

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<210> 377
<211> 148
<212> PRT
<213> Homo sapien
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[illegible]

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<210> 378
<211> 1719
<212> PRT
<213> Homo sapien
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Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys	Cys	Arg	Cys	Phe
			20					25					30		
Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys	Ser	Asn	Val	Gly	Thr	Ser	Gly	Asp
		35					40					45			
His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp
	50					55					60				
Cys	Arg	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly	Lys	Ser	Asn	Val
65					70					75				80	
Gly	Ala	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Asp

				85					90				95		
Lys	Met	Gly	Lys	Trp	Cys	Cys	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser
			100						105				110		
Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp	Gly	Asp	Tyr	Asp	Asp	Ser	Ala	Phe
		115						120					125		
Met	Glu	Pro	Arg	Tyr	His	Val	Arg	Gly	Glu	Asp	Leu	Asp	Lys	Leu	His
	130						135					140			
Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val	Pro	Arg	Lys	Asp	Leu	Ile	Val	Met
145					150					155					160
Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys	Lys	Asp	Lys	Gln	Lys	Arg	Thr	Ala
				165					170					175	
Leu	His	Leu	Ala	Ser	Ala	Asn	Gly	Asn	Ser	Glu	Val	Val	Lys	Leu	Leu
			180					185						190	
Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn	Val	Leu	Asp	Asn	Lys	Lys	Arg	Thr
	195						200					205			
Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys	Gln	Glu	Asp	Glu	Cys	Ala	Leu	Met
210						215					220				
Leu	Leu	Glu	His	Gly	Thr	Asp	Pro	Asn	Ile	Pro	Asp	Glu	Tyr	Gly	Asn
225					230					235					240
Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr	Asn	Glu	Asp	Lys	Leu	Met	Ala	Lys
				245					250					255	
Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp	Ile	Glu	Ser	Lys	Asn	Lys	His	Gly
			260					265						270	
Leu	Thr	Pro	Leu	Leu	Leu	Gly	Val	His	Glu	Gln	Lys	Gln	Gln	Val	Val
	275						280						285		
Lys	Phe	Leu	Phe	Lys	Lys	Lys	Ala	Asn	Leu	Asn	Ala	Leu	Asp	Arg	Tyr
	290						295				300				
Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala	Val	Cys	Cys	Gly	Ser	Ala	Ser	Ile
305					310					315					320
Val	Ser	Leu	Leu	Leu	Glu	Gln	Asn	Ile	Asp	Val	Ser	Ser	Gln	Asp	Leu
				325					330					335	
Ser	Gly	Gln	Thr	Ala	Arg	Glu	Tyr	Ala	Val	Ser	Ser	His	His	His	Val
			340					345						350	
Ile	Cys	Gln	Leu	Leu	Ser	Asp	Tyr	Lys	Glu	Lys	Gln	Met	Leu	Lys	Ile
	355						360					365			
Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Asn	Val	Ser	Arg	Thr	Arg	Asn	Lys
	370					375					380				
Pro	Arg	Thr	His	Met	Val	Val	Glu	Val	Asp	Ser	Met	Pro	Ala	Ala	Ser
385					390					395					400
Ser	Val	Lys	Lys	Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys
				405					410					415	
Cys	Arg	Cys	Phe	Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys	Ser	Asn	Val	Gly
			420					425						430	
Thr	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Ser	Lys
	435						440						445		
Met	Gly	Lys	Trp	Cys	Arg	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly
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Lys	Ser	Asn	Val	Gly	Ala	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys
465					470					475					480
Thr	Leu	Arg	Asn	Lys	Met	Gly	Lys	Trp	Cys	Cys	His	Cys	Phe	Pro	Cys
				485					490					495	
Cys	Arg	Gly	Ser	Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp	Gly	Asp	Tyr	Asp
			500					505					510		
Asp	Ser	Ala	Phe	Met	Glu	Pro	Arg	Tyr	His	Val	Arg	Gly	Glu	Asp	Leu
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Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp
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 Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln
 545 550 555 560
 Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val
 565 570 575
 Val Lys Leu Leu Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn
 580 585 590
 Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu
 595 600 605
 Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp
 610 615 620
 Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys
 625 630 635 640
 Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys
 645 650 655
 Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys
 660 665 670
 Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala
 675 680 685
 Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly
 690 695 700
 Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser
 705 710 715 720
 Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser
 725 730 735
 His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln
 740 745 750
 Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Gln Gln Asp Leu Lys
 755 760 765
 Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser
 770 775 780
 Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp
 785 790 795 800
 Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly
 805 810 815
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 820 825 830
 Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe
 835 840 845
 Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser
 850 855 860
 Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn
 865 870 875 880
 Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu
 885 890 895
 Glu Gly Ser Glu Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile
 900 905 910
 Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn
 915 920 925
 Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro
 930 935 940
 Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu
 945 950 955 960
 Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe

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Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His					
	980		985		990
Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser Glu Ile Ser					
	995		1000		1005
Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu					
	1010		1015		1020
Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Ile Asp Thr Met Lys His					
	1025		1030		1035
Gln Ser Gln Leu Pro Arg Thr His Met Val Val Glu Val Asp Ser Met					
	1045		1050		1055
Pro Ala Ala Ser Ser Val Lys Lys Pro Phe Gly Leu Arg Ser Lys Met					
	1060		1065		1070
Gly Lys Trp Cys Cys Arg Cys Phe Pro Cys Cys Arg Glu Ser Gly Lys					
	1075		1080		1085
Ser Asn Val Gly Thr Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr					
	1090		1095		1100
Leu Arg Ser Lys Met Gly Lys Trp Cys Arg His Cys Phe Pro Cys Cys					
	1105		1110		1115
Arg Gly Ser Gly Lys Ser Asn Val Gly Ala Ser Gly Asp His Asp Asp					
	1125		1130		1135
Ser Ala Met Lys Thr Leu Arg Asn Lys Met Gly Lys Trp Cys Cys His					
	1140		1145		1150
Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Lys Val Gly Ala Trp					
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Gly Asp Tyr Asp Asp Ser Ala Phe Met Glu Pro Arg Tyr His Val Arg					
	1170		1175		1180
Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val					
	1185		1190		1195
Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys					
	1205		1210		1215
Lys Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly					
	1220		1225		1230
Asn Ser Glu Val Val Lys Leu Leu Leu Asp Arg Arg Cys Gln Leu Asn					
	1235		1240		1245
Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys					
	1250		1255		1260
Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro					
	1265		1270		1275
Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr					
	1285		1290		1295
Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp					
	1300		1305		1310
Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Val					
	1315		1320		1325
His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala					
	1330		1335		1340
Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala					
	1345		1350		1355
Val Cys Cys Gly Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Gln Asn					
	1365		1370		1375
Ile Asp Val Ser Ser Glu Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr					
	1380		1385		1390
Ala Val Ser Ser His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr					
	1395		1400		1405

Lys Glu Lys Gln Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu
 1410 1415 1420
 Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly
 1425 1430 1435 144
 Ser Glu Asn Ser Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn
 1445 1450 1455
 Lys Asp Gly Asp Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser
 1460 1465 1470
 Asn Asn Val Gly Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly
 1475 1480 1485
 Asn Gly Asp Asn Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu
 1490 1495 1500
 Asn Gln Gln Phe Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys
 1505 1510 1515 152
 Glu Leu Val Ser Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser
 1525 1530 1535
 Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu
 1540 1545 1550
 Ser Gln Arg Leu Glu Gly Ser Glu Asn Gly Gln Pro Glu Lys Arg Ser
 1555 1560 1565
 Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Leu Glu Asn Phe
 1570 1575 1580
 Met Ala Ile Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe
 1585 1590 1595 160
 Pro Glu Asn Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly
 1605 1610 1615
 Leu Ile Pro Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro
 1620 1625 1630
 Asp Thr Glu Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln
 1635 1640 1645
 Lys Gln Phe Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile
 1650 1655 1660
 Leu Ile His Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser
 1665 1670 1675 168
 Glu Leu Ser Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn
 1685 1690 1695
 Ser Thr Leu Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr
 1700 1705 1710
 Met Lys His Gln Ser Gln Leu
 1715

<210> 379

<211> 656

<212> PRT

<213> Homo sapien

<400> 379

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 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
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 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60

Cys Arg His Lys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Ile Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Ile Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val
 340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu
 370 375 380
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys
 385 390 395 400
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu
 405 410 415
 Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
 420 425 430
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu
 450 455 460
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu
 465 470 475 480
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp
 485 490 495
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu

500	505	510
Asn Gly Glu Pro Glu Leu Glu	Asn Phe Met Ala Ile Glu	Asn Glu Met Lys
515	520	525
Lys His Gly Ser Thr His Val	Gly Phe Pro Glu Asn Leu	Thr Asn Gly
530	535	540
Ala Thr Ala Gly Asn Gly Asp	Asp Gly Leu Ile Pro Pro	Arg Lys Ser
545	550	555
Arg Thr Pro Glu Ser Gln Gln	Phe Pro Asp Thr Glu Asn	Glu Glu Tyr
565	570	575
His Ser Asp Glu Gln Asn Asp	Thr Gln Lys Gln Phe Cys	Glu Glu Gln
580	585	590
Asn Thr Gly Ile Leu His Asp	Glu Ile Leu Ile His Glu	Glu Lys Gln
595	600	605
Ile Glu Val Val Glu Lys Met	Asn Ser Glu Leu Ser Leu	Ser Cys Lys
610	615	620
Lys Glu Lys Asp Ile Leu His	Glu Asn Ser Thr Leu Arg	Glu Glu Ile
625	630	635
Ala Met Leu Arg Leu Glu Leu	Asp Thr Met Lys His Gln	Ser Gln Leu
645	650	655

<210> 380
 <211> 671
 <212> PRT
 <213> Homo sapien

<400> 380

Met Val Val Glu Val Asp Ser Met	Pro Ala Ala Ser Ser Val Lys Lys
1	5 10 15
Pro Phe Gly Leu Arg Ser Lys Met	Gly Lys Trp Cys Cys Arg Cys Phe
20	25 30
Pro Cys Cys Arg Glu Ser Gly Lys	Ser Asn Val Gly Thr Ser Gly Asp
35	40 45
His Asp Asp Ser Ala Met Lys Thr	Leu Arg Ser Lys Met Gly Lys Trp
50	55 60
Cys Arg His Cys Phe Pro Cys Cys	Arg Gly Ser Gly Lys Ser Asn Val
65	70 75 80
Gly Ala Ser Gly Asp His Asp Asp	Ser Ala Met Lys Thr Leu Arg Asn
85	90 95
Lys Met Gly Lys Trp Cys Cys His	Cys Phe Pro Cys Cys Arg Gly Ser
100	105 110
Gly Lys Ser Lys Val Gly Ala Trp	Gly Asp Tyr Asp Asp Ser Ala Phe
115	120 125
Met Glu Pro Arg Tyr His Val Arg	Gly Glu Asp Leu Asp Lys Leu His
130	135 140
Arg Ala Ala Trp Trp Gly Lys Val	Pro Arg Lys Asp Leu Ile Val Met
145	150 155 160
Leu Arg Asp Thr Asp Val Asn Lys	Lys Asp Lys Gln Lys Arg Thr Ala
165	170 175
Leu His Leu Ala Ser Ala Asn Gly	Asn Ser Glu Val Val Lys Leu Leu
180	185 190
Leu Asp Arg Arg Cys Gln Leu Asn	Val Leu Asp Asn Lys Lys Arg Thr
195	200 205
Ala Leu Ile Lys Ala Val Gln Cys	Gln Glu Asp Glu Lys Ala Leu Met
210	215 220
Leu Leu Glu His Gly Thr Asp	Pro Asn Ile Pro Asp Glu Tyr Gly Asn

225						230					235					240
Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr	Asn	Glu	Asp	Lys	Leu	Met	Ala	Lys	
				245						250					255	
Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp	Ile	Glu	Ser	Lys	Asn	Lys	His	Gly	
				260						265				270		
Leu	Thr	Pro	Leu	Leu	Leu	Gly	Val	His	Glu	Gln	Lys	Gln	Gln	Val	Val	
				275			280						285			
Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala	Asn	Leu	Asn	Ala	Leu	Asp	Arg	Tyr	
				290		295					300					
Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala	Val	Cys	Cys	Gly	Ser	Ala	Ser	Ile	
305					310					315					320	
Val	Ser	Leu	Leu	Leu	Glu	Gln	Asn	Ile	Asp	Val	Ser	Ser	Gln	Asp	Leu	
				325					330					335		
Ser	Gly	Gln	Thr	Ala	Arg	Glu	Tyr	Ala	Val	Ser	Ser	His	His	His	Val	
				340				345					350			
Ile	Cys	Gln	Leu	Leu	Ser	Asp	Tyr	Lys	Glu	Lys	Gln	Met	Leu	Lys	Ile	
				355			360					365				
Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Gln	Asp	Leu	Lys	Leu	Thr	Ser	Glu	
				370		375					380					
Glu	Glu	Ser	Gln	Arg	Phe	Lys	Gly	Ser	Glu	Asn	Ser	Gln	Pro	Glu	Lys	
385					390					395					400	
Met	Ser	Gln	Glu	Pro	Glu	Ile	Asn	Lys	Asp	Gly	Asp	Arg	Glu	Val	Glu	
				405					410					415		
Glu	Glu	Met	Lys	Lys	His	Glu	Ser	Asn	Asn	Val	Gly	Leu	Leu	Glu	Asn	
				420				425					430			
Leu	Thr	Asn	Gly	Val	Thr	Ala	Gly	Asn	Gly	Asp	Asn	Gly	Leu	Ile	Pro	
				435			440					445				
Glu	Arg	Lys	Ser	Arg	Thr	Pro	Glu	Asn	Gln	Gln	Phe	Pro	Asp	Asn	Glu	
				450		455					460					
Ser	Glu	Glu	Tyr	His	Arg	Ile	Cys	Glu	Leu	Val	Ser	Asp	Tyr	Lys	Glu	
465					470					475				480		
Lys	Gln	Met	Pro	Lys	Tyr	Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Gln	Asp	
				485					490					495		
Leu	Lys	Leu	Thr	Ser	Glu	Glu	Glu	Ser	Gln	Arg	Leu	Glu	Gly	Ser	Glu	
				500				505					510			
Asn	Gly	Gln	Pro	Glu	Lys	Arg	Ser	Gln	Glu	Pro	Glu	Ile	Asn	Lys	Asp	
				515			520					525				
Gly	Asp	Arg	Glu	Leu	Glu	Asn	Phe	Met	Ala	Ile	Glu	Glu	Met	Lys	Lys	
				530		535					540					
His	Gly	Ser	Thr	His	Val	Gly	Phe	Pro	Glu	Asn	Leu	Thr	Asn	Gly	Ala	
545					550					555					560	
Thr	Ala	Gly	Asn	Gly	Asp	Asp	Gly	Leu	Ile	Pro	Pro	Arg	Lys	Ser		

<210> 381
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 381

ggagagagcgt ctgctggggc aggaaggggt ttccctgccc tctcaccctgt cctcaccac	60
ggtaaccatgc ttccctcag ggtatcccaa cccagggggc taccatgac ctclpagggg	120
cccatatccc agyagaagca ttggggaggt ggaggcagggt gaaggaccca ggaactcacc	180
atcttggggc tccaaggcag agggaggggt cctcaagaaq gtccggaggga aaatcugtna	240
caagcagtcg g	251

<210> 382
 <211> 3279
 <212> DNA
 <213> Homo sapiens

<400> 382

cttccctgcag ccccatgct ggtgaggggc acgggagagga acagtggacc caacatggaa	60
atgctgtagg gtgtcaggaa gtgatcgggc tctggggcag ggaggagggg tggggagtg	120
cactggggagg ggcacatcctg cagaaggtag gaggagcaca acccccgctg caggggagg	180
gagagccctg cggcaccctg gggagcagag gaggcagrac ctgccagggc ctggggagg	240
gggcttggag ggcgtgagga yggagcaggg ggcctgcatg ctggagtgag gggcagggg	300
cagggcggca ggtggcctca caccgggag agagggcccc tctgcnaggc cctcactgg	360
gcccacggag gacactgctt ttctctgag gagtccggag ctgttgatgg tggcggacc	420
aagaaggana gggcctggct cagggtgtcc gaggctgtcg ctggcttccc ttggggatca	480
gactgaggg agggagggcg gcccgggttct ggggggagtg atggtgagga tgacctgggg	540
gtggctccag gcttggcccc tgcctggggc ctcccccag ctccctcaca gctcctggc	600
cctcagttct tccctccac tccctccctc atctggcctc agtgggtcat tctgatcact	660
gaactgacca taccagcgc tgcctccggc cttccctggg tccccaatgc cctggagg	720
ggagctctag tcagagagta gtctgagga ggtggcctct gcgatgtgac tgtgggggg	780
gcactctgca gatggctccc gccctcctac tgcctgacclg tctgcaggga ctgtcctct	840
ggacacttcc ccttctgag gagctggacc ctgaagctcc ctcccatag gccagagctg	900
gagccttgtt cctctgttct gactccttgc ccatattctt gtgggagtg gtcttggga	960
catcttctgt tgttctgag agctgggaat tgcctcagt catctgclg cggggtctg	1020
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ttaccttvg ggtgattctg ggggtccact tgtctgtaat ggtgtgcttc aggtatnac	1140
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gcattcccgg agtgagaca aggacccat cggcggcaac cctggagtyc cctgtccc	1260
ccctacctc tagtaaatc aggtccacct cagcttctgy catcacttgg ccttcttgg	1320
tgttggacac ctgaagrttg gaactcacct ggcggagact cggagctcct gagtctact	1380
gacctgtgt ttctgggtgt gagtccagg ctgclaggaa agggaatgg cagacacagg	1440
tgtatgocaa tgtttctgaa elagggtataa ttctgtcctc tcttctggaa cactggctgt	1500
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tgtttgtgg gtgcagagat gggaggggtg gggccracc tggagagtg gacagtga	1620
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tagggggaga aactgagagc tgattaatc caggaggttt gttcaggtcc cccaaacc	1860
cgtcagattt gatgatttct taccaggat taccagaatc agagctate atgtctgt	1920
ttattatgg ttgttccatt gataggalac atactgaat cagcaacac accagatgt	1980
tgtattagag tgtggagaa acgggggaaa acttgcaglt acgagagctg gcaacttgg	2040
tttactaggt ttccagactg gcaggaggtc aaacctatta ggttggagac cttgtggag	2100
gtagctgac cagctgaltg aggaactagc cagggtgggg ccttccctt tggatgggg	2160

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gcataatcga cagttattct ctccaagtgg agacttaagg acagcatata attctccctg 2220
caaggatgta tgaataatag tacaaagtaa ttccaactga ggaagctcac ctgaccccta 2280
gtgtccaggg tttttactgg gggctctgtg gacgagtatg gggtaattga ataattgaac 2340
tgaagtcttc agactctagg ttccttagag ttcaaacaga tacagcatgg tccagagttc 2400
cagatgtaca aaaacagggg ttcatcaca atcccatctt tagcatgaag ggtctggcat 2460
ggcccaaggc cccaagtata tcaaggcart tgggcagaa atgccaaggg atcaaatgtc 2520
atctcccagg agttattcaa gggctgagcc tttacttggg atgtacaggc tttgagcagt 2580
gcagggtctg caggtcaacc ttttattgta cgggggatga gggaaaggga gaggatgagg 2640
aagcccccct ggggatttgg ttgggtcttg tgatcaggtg gtctatgggg ctatccctac 2700
aagaagaagc ccaagaatag gggcacattg aggaatgata ctgagcccaa agagcattca 2760
atcattgttt tatttgcctt ctctcacc cacttggtgag ggggggatta ccacnctggg 2820
gttatgaaga tggttgaca cccacacat agcacctggg atatgagatc acaagtttct 2880
tagccataga gattcacagc ccagagcagg aggacgtgac acccatgca ggtgacatg 2940
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acaagacggg ggggcaact ctggtttcgg tgggggaatg ccatggtctt gctttactaa 3060
gttttgagac cggcaggtag tgaactcat taggctgaga accttgtgga atgacgtgta 3120
ccagctgat agaggaaagta gccaggttgg agcctttccc agtgggtgtg ggacatctct 3180
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gttttcagac ctttaaaaaa aaaaataaaa aaaggtttt 3279

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<210> 383

<211> 155

<212> PRT

<213> Homo sapiens

<400> 383

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Met Ala Gly Val Arg Asp Gln Gly Gln Gly Ala Arg Trp Pro His Thr
      5                                10                    15

Gly Lys Arg Gly Pro Leu Leu Gln Gly Leu Thr Trp Ala Thr Gly Gly
      20                                25                    30

His Cys Phe Ser Ser Glu Glu Ser Gly Ala Val Asp Gly Ala Gly Gln
      35                                40                    45

Lys Lys Asp Arg Ala Trp Leu Arg Cys Pro Glu Ala Val Ala Gly Phe
      50                                55                    60

Pro Leu Gly Ser Asp Cys Arg Glu Gly Gly Arg Gln Gly Cys Gly Gly
      65                                70                    75                    80

Ser Asp Asp Glu Asp Asp Leu Gly Val Ala Pro Gly Leu Ala Pro Ala
      85                                90                    95

Trp Ala Leu Thr Gln Pro Pro Ser Gln Ser Pro Gly Pro Gln Ser Leu
      100                               105                   110

Pro Ser Thr Pro Ser Ser Ile Trp Pro Gln Trp Val Ile Leu Ile Thr
      115                               120                   125

Glu Leu Thr Ile Pro Ser Pro Ala His Gly Pro Pro Trp Leu Pro Asn
      130                               135                   140

Ala Leu Glu Arg Gly His Leu Val Arg Glu
      145                               150

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<210> 384
 <211> 557
 <212> DNA
 <213> Homo sapiens

<400> 384
 ggatccctcta yagcgggcgc ctantactac taaattcgcg ggcgcgtcga cgaagaagag 60
 aaagatgtgt ttgtgttttg autctctgtg gtcccttcca atgctgtggg ttcccaacca 120
 ggggaagggt ccctttttgca ttgcgaagtg ccataaccat gacactact ctaccatggg 180
 tctgcctcct ggccaaagcay gctggttttg aagaatgaaa tgaatgattc tacaagctagg 240
 actcaaccct gaantggaaa gtcttgcact cccatcttgc ggaaccgct gtgcacatgc 300
 ctctgtagag agcagcatcc ccagggaact tggaaacagt tggcactgta aggtgcttgc 360
 tccccaaagg acatccctaa aggtgttgta atggtgaaaa cgtcttccct ctttattgcc 420
 ccttcttatt tatgtgaaca actgtttgtc tttttttgta ttttttttaa actgttaagt 480
 tcaacttgta aatgaaatc catgcaata aattatgoga ttttttttcc aagtaaaa 540
 aaaaaa
 557

<210> 385
 <211> 337
 <212> DNA
 <213> Homo sapiens

<400> 385
 ttcccaggta atgtggcagg gaagacacat tcaatctcct tcatggggct gattccttta 60
 gtctctctag cagcagatgg gctaggagga agtgaccaca gtggttgact ctatgtgca 120
 tctcaaggcc atctgtgtgc ttcgagtacg gacacatcat cactcctgca ttgttgatca 180
 aaagctggag gtgcttttcc tccagctaaa agcccttagc aaaaagctga atagacttca 240
 tatcagacag gtccagtttc cgcaccaaca cctgctggtt cctgtcgtg gtctggatct 300
 atttggccac caattccccc ttttccacat ccggca
 337

<210> 386
 <211> 300
 <212> DNA
 <213> Homo sapiens

<400> 386
 gggcccgcta ccggcccgagg ccccgccctc yaggtccctc tcccgggcty cctgcccga 60
 gcccgctcgg ccccaaggggt gggcgcgggg ctgctctac cggctggcgg ctgtaactca 120
 gcgaaccttg ccgaaggct ctacgaaggc cccaccgacc ccagccggcg cggcgggcggc 180
 gcggactttg cccggtgtgt gggcgggagc ggaactgcgt tccgaggacg ggcagcgaag 240
 atgttagcct tcgctgncag gaccgtggac agatcccagg gctgltggtt aacctcagcc 300

<210> 387
 <211> 537
 <212> DNA
 <213> Homo sapiens

<400> 387
 gggccgaagt gggcaccag ggactctttc caggttccct tctcgggato atcaaggctg 60
 cccctcctg tgcctatctg atcagcact atgagtccg ccaaaagctt tccagaggc 120
 tgaacaaagg ccggttctg ggcggctgaa aggggcaagg aggcaggac ccgctctctc 180
 ccacggatgg ggaaggggac ggaggagacc cagccaaagla ccttttctc agcactgagg 240
 gagggggctt gtctccttc cctccggcg acaagctcca gggcagggcl gtccctctgg 300

```

gaggccacagc aattctctcag acacaacttc ttcctgcttgc tccagtcgtg gggatcaton 360
cttaccacacn ccccaagttc aagacccaat ctccagctg ccccttctt gtttccctgt 420
gtttgtgtga gctgggcatg tctccaggaa ccaagaaagcc ctacgctgg tgtagtcttc 480
ctgaccttg ttaattctt aagttctaaag atgatgaact tcaaaaaaaa uaaaaaa 537

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<210> 388

<211> 520

<212> DNA

<213> Homo sapiens

<400> 388

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aggataattt ttaaaccaat caaatgaaa aaacaacaa aaasaaaag aaatgtcatg 60
tgaggtaaa ccagtttgc tcccttaat gtggaaaag tagaggact actcagcact 120
gtttgaagat tgcctctct acagcttctg agaatgtgt tatttcactt gccagtgaa 180
ggacuccctc uccaacatgc ccagccca ccttaagcat ggtcccttg carcagycaa 240
ccaggaaact gctacttgt gacctacca gagaccagga gggtttgtt agctcacagg 300
acttccccc cccagaaga ttacatccc atactagact cactactaac tcaactaggc 360
tctactcaa ttgatggta tttagcaatt ccatttttt ttgggtacta taacagaaa 420
atcttctctc ttctcattac cagtaaaggc tcttggctat tttctgttg aatgattct 480
atgaacttgt cttattttaa tgggtgggtt tttttctgt 520

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<210> 389

<211> 365

<212> DNA

<213> Homo sapiens

<400> 389

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cgttgcccca gtttgacaga aggaagggc gagcttatt aaagtctaga gggagtgag 60
gagttaaagg tggatttcag atctgcccgc ttccagccgc agtctgccc ctgctcccc 120
aargacttcc caataatct cccagcgcc tccagctca ggcgtctag aagcgtcttg 180
aagcctatgg ccagctgtct ttgtgtccc tctcaccgc ctgtcctca agctgagact 240
cccaggaaac ctccagacta ccttctctg ccttcagca ggggcttgc ccacattct 300
tgagggtcag tggagaacc tagactccc ttgctagagg tagaaaggg aggggtgctg 360
gggag 365

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<210> 390

<211> 221

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> [1]... (221)

<223> n = A, T, C or G

<400> 390

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tgctctcca tctggccc gaattctctg tcaggaaagt ggggattggc cccatctgca 60
tacacggntt ctcatgggtg tggacatct ctgcttgagg ttccaggag gcctctggct 120
gctctnqag tctgancga nctgttgc cactntgaca aaaggaaagg cggagcttat 180
tcaaagctca gaggagtg aggaattag gctggatttc a 221

```

<210> 391

<211> 325

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(325)

<223> n = A,T,C or G

<400> 391

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tggagcaggt cccgaggcct cccatagagcc tggggcccgac cctgtgncgc tgcangcttc 60
ctctcgcgcc cagcctggag ctgctccctgg catctaccaa caatcagncg aggcgagcag 120
tagccagggc actgctgcgc acagccagtc cnnataccat catgtacccc ggtgngctct 180
ncauttugat ntcnagacc ctaccacatc tagttctgct ctcccaccgg ntaccagccc 240
cactgccccag gaatcctaca gccagtaccc tgtcccgacg tctctacctc ccagtacgat 300
gagaccctccg gctactacta tgacc

```

325

<210> 392

<211> 277

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(277)

<223> n = A,T,C or G

<400> 392

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agtcctactt nggcagagga ctctactctg agtctcttcc ccggcctgno ccagtngnaa 120
antaccenga accgncatgn cttaanaaen noctggtttn tgggttnttc aatgarggca 180
tgcagtgccac caccctgtcc actacgtgat gctgtaggat taaagtctca cagtgggcgg 240
ctgaggatcc agcgcctcgt cctgtgttgc tggggaa

```

277

<210> 393

<211> 566

<212> DNA

<213> Homo sapiens

<400> 393

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actagtcacg tgtggtggaa ttgcgggccc cgtcgacgga caggtcagct gtctggctca 60
gtgatctacn ttctgaagtt gtctgaaaat gtcttcacga ttcaattcag cctaaacgtt 120
ttgcggggaa cactgcagag acaatgctgt gaggttccaa ccttagcccc tctgcgggca 180
gaggaaggtct agtttgtcca tcagcattat catgatctca ggaactggta cttagttaag 240
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gggtggtttt caaaagtaga aatgtcctgt attccgatga tcatcctgta aacattttat 360
catttatctc tcatccctgc ctgtgtctat tatttatatt abatctctac gctggaaact 420
ttctgectca atgtttacty tgcctttgth ttgactagtt tgtgttgttg aaaaaaaa 480
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ttttgectat caaaaaaaan aaaaaa

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566

<210> 394

<211> 384

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(384)
 <223> n = A,T,C or G

<400> 394
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 gcaggaggac cgggctttca ggagttttta gctgagtgto actgtagacc ccaatacca 180
 tcccaagatt atcgggagaa agggggcagt aattaccraa atccggttgg agcatgacgt 240
 gaacatccag tttcctgata aggacgatgg gaaacagccc caggaccana ttaacntcac 300
 agggtagcga agaacacag aggcctgcag ggatgctata ctgagaattg tgggtgaact 360
 cgagcagatg gtttctgagg acgt 384

<210> 395
 <211> 399
 <212> DNA
 <213> Homo sapiens

<400> 395
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 tatcagaggt ttcatcattg cygaatttgt ggagtctaat gaaatcatgg cctctgaagt 180
 attcaggtct ttccagtacc ctgagttctc tatcaggttg cctaacacag gcagaattgg 240
 ccagctactt gtctgcaatc gtatcttcaa gaataacctg gcaatccctt tgactgacgt 300
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 agagcctggt gagaccatcc aatcccaat acaatgcac 399

<210> 396
 <211> 403
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(403)
 <223> n = A,T,C or G

<400> 396
 tggagttntc agtgraaaca agccataaag ctccagtagc aaattactgt ctcaacagaa 60
 gacattttca acttttgtct cagctgctga taaaacaat catgtgttga gcttgactcc 120
 agacaaggac aacctgttcc ttcataaact tctagagaaa aaaggaggt gtttagtagat 180
 actaaaaaaa gttyatgaat aatctggata ttttctctaa aaagattcct tgaaacacat 240
 taggaaaatg gagggcctta tgatcagaat gctagaatta gtccattgtg ctggaagcag 300
 gtttagggga yggagtggg gataaaagaa gyaanaaag aagagtgaag aaacctattt 360
 atcaagrag gtgctatcac tcaatgttag gccctgctct ttt 403

<210> 397
 <211> 100
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(100)
 <223> n = A,T,C or G

<400> 397

actagtncag tgtggtggag ttgcgggcgg cgtgcgccta naanccatct ctctagcaaa 60
 tccatcccg utccgtgttg gtnaccgaat gactgacaaa 100

<210> 398

<211> 278

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(278)

<223> n = A,T,C or G

<400> 398

ggggccgcgt ngacagccgt ttccgcragcg ctgcgccttg ggtggggatg tgcctgcacgc 60
 ccacctggac atctggaggt cagcggcctg gatgaagag cggacttacc ctggggcgat 120
 tccctactgt gctcngacca gtgaggagag ctggaccgac agcagaggtg acctatcttg 180
 ctccgggacg cccatccacc tctggcaglt cctcaggag ttgctactca agcccccacg 240
 ctatggccgc ttcattangt ggcctcaccg ggagaagg 278

<210> 399

<211> 298

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(298)

<223> n = A,T,C or G

<400> 399

acggaggggtg aggaagcgnc cctgggagtg anaggatggg tccctgcatt gaccccccen 60
 ggggtgceng catggagcgc atgggcgcgg gcctgggccc cggcatggat cgcgtgggct 120
 ccgagatcga ggcgatgggc ctggtcatgg accgcatggg ctccgtggag cgcgtgggct 180
 ccggcattga ggcgatgggc ccgtgggccc tgcgccacat ggcctccanc attgancgca 240
 tgggcccagac catggagcgc attggctctg gcgtggagcn catgggtgcc ggcattggg 298

<210> 400

<211> 548

<212> DNA

<213> Homo sapiens

<400> 400

acatcaacta ctctctcatt ttaagggtatg gcagttccct tcatccctct ttcctgcctt 60
 gtacatgtac atgtatgaaa ttctcttctc ttaccgaact ctctccacac atcacaggat 120
 caaagaacca caagcttaga agggtaagag ggcauccctat gaaatgaaat ggtgatttct 180
 tgaatctctt ttctccacgt ttaaggggccc atggcaggac tttaggttgc gagttaagac 240
 tgcagagggc tagagaatta ttcatcacg gctttgaggc caccatgtc acttatcccg 300
 tataccctct caccatccgc ttgtctactc tgatgccccc agatgcaac tgggcagcta 360
 gttgggcccc taattctggg cctttgttgt ttgttttaac tacttgggca tccaggaag 420
 ctttccagtg atctctacc atgggcccc ctctgggat caagccctc ccaggccctg 480
 tccccagccc cctctgccc agcccacccg cttgccttgg tgcctagccc tcccatggg 540
 agcaggtt 548

<210> 401
 <211> 355
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(355)
 <223> n = A,T,C or G

<400> 401
 artgtttcca tgttatgttt ctacacattg ctacctnagt. gctctctggaa acctagcttt 60
 tgaatgtctcc aagtagtcca ccttcattct acctcttgan actgtatcat ctttgccaaag 120
 taagagtggg ggctatttc aggtgctttg acaaaatgac tggutctga cttaacgttc 180
 tataaatgaa tgtgctgaag caaagtgcac atggtggcgg cgaagaagan aaagtgtgt 240
 tttgttttgg actctctgtg gtccttcca atgctgnggg tttccaaaca ggggaagggt 300
 ccttttggca ttgccaagt ccataaccat gagcactact ctaccatggg tctgc 355

<210> 402
 <211> 407
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(407)
 <223> n = A,T,C or G

<400> 402
 atggggcaag ctggataaag aaccaagacc cactggagta tgcgtcttcc aagaaaccca 60
 tctcacatgc ggtggcctac ataggctcaa aataaaggaa tggagaaaaa tctttcaagc 120
 aatgggaaa cagaataaag caggtgttgc actcctactt tctgacaaa cagactatgc 180
 gaataaagat aaaaaagaga aggacattac aaaggtggtc ctgacctttg ataatctca 240
 ttgcttgata ccaaccggg ctgttttaat tgcacaaac aaaaaggataa tttgctgagg 300
 ttgtggagct tctccctgc agagagtccc tcatctccca aaatttgggt gagutgtaag 360
 gntgattttg ctgacaaatc cttctctgua gtttactcca ttccaa 407

<210> 403
 <211> 303
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(303)
 <223> n = A,T,C or G

<400> 403
 cagtatttat agctnactg aazagctagt agcaggcaag tctcaaatcc eggcaccana 60
 tcccaagcaa gagcatggc atggtgaaa tgcaaaaggc gaatctggcc aatctacaaa 120
 tagagaaaca gacctactca gtcatgaaca aaagggcaga caccacatg gatctcatgg 180
 gggattggat attgttatta tagagcagga agatgacagt gatctgcat tggcaccaca 240
 tcttaacaaac gaccgaacc cattatctcc ataacctcc attngglaac catgttgaaa 300
 gga 303

<210> 404
 <211> 225
 <212> DNA
 <213> Homo sapiens

<400> 404
 aagtgttaact tttaaaaatt tagtggattt tgaaaaattct tagaggaaag taaaggaaaa 60
 attgttaantg cactcattta cttttacatg gtgaaggttc tctcttgatc ctacaaacag 120
 acattttcca ctctgtgttc catagttytt aagtgtatca gatgtgttgg gcattgtgaat 180
 ctccaagtgc ctgtgttaata aataaagtar ctttatttva ttcat 225

<210> 405
 <211> 334
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(334)
 <223> n = A,T,C or G

<400> 405
 gagctgttat actgtgagtt ctactaggaa atcatcaaat ctgagggttg totggaggac 60
 ttcaataaac ctccccccat agtgatcag cttrcagggg gtccagtcce tctcttaet 120
 tcatccccat cccatgccaa aggaagacc tccctccttg gctcacagcc ctctctagge 180
 ttcccagtcg ctccaggaca gagtgggtta tgttttcage tccatccttg ctgtgagtg 240
 ctggtgaggt tgtgctcca gcttctgctc agtgcctcat ggacagtgc cagcccatgt 300
 cactctccc tctctcanng tggatccca cct 334

<210> 406
 <211> 216
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(216)
 <223> n = A,T,C or G

<400> 406
 tttcatacct aatgagggag ttganatnac atnaacnag gaaatgcatg gatctcaany 60
 gaaacaaaca cccaataaac tcggagctggc agactgaca ctgtgagaca tycatttgct 120
 acnaaacaca aattttnatgt tgcacccctg tttctaccc tgtgggttat gacaaagaca 180
 actgcaanag aatnttcaag aaggaggaact gccant 216

<210> 407
 <211> 413
 <212> DNA
 <213> Homo sapiens

<400> 407
 gctgacttgc tagtatcatc tgcattcctt gaagvacaag aacttcatgc cttyaotcat 60
 gtaaatgraa taggabtaaa aaataaattt gatatractl ggaacagac aaaaaatatt 120
 gtacaaatatt gcacccragt tcagattcta vacctggcca ctgaggagc aagagttaat 180
 ccagaggtc tatgtcttca tctgttatgg caaatggatg tcatgacgt accttcattt 240

```

ggagaaattgt catttgteca tgcgacagtt gatacttatt cccatttcac atgggcacac 300
tgccagacag gagaaagtcc tcccatgtta aaagacattc attatcttgc tctcctgtca 360
tgggagttcc agaaaaagtt aaaacagaca atgggcacag ttcctgtagta aag      413

```

```

<210> 408
<211> 183
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(183)
<223> n = A,T,C or G

```

```

<400> 408
ggagctngcc ctcaattccf ccatntctat gttancatat ttaatgtctt ctggnattaa 60
tnccttaacta gttatccct aaagggctcn ntaatcccta acagtcctcc ccatgtgag 120
cattatccct ccagtattcn ccttctnttt catttactcc ttcctggcta ccatgtact 180
ntt      183

```

```

<210> 409
<211> 250
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(250)
<223> n = A,T,C or G

```

```

<400> 409
cccacgcatg ataagctctt tatttctgta agtcctgcta ggaaatcalt aaatctgacg 60
gtgggtttgg ggacctgaac aaacctcctg taattaatca gctttcagtt tctcccccta 120
gtccctcttt caacaacata ggaggatcct cccctctctt ctgctcacgg ccttatctag 180
gcttccccagt gccccagga cagcgtgggc tatgtttacg gcgctcctt gctggggggg 240
ggccttatgc      250

```

```

<210> 410
<211> 306
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(306)
<223> n = A,T,C or G

```

```

<400> 410
ggctgggtttg caagantgan atgaatgctt ctacagctag gacttaacct tgaatggaa 60
agtcttgcaa tcccatttgc aggatccgtc tctgacacat cctctgtaga gtagcgcatt 120
cccagggaac ttggaaacag ttggcactgt aaggtgcttg ctccccaaga cacatcttan 180
aaggtgttgt aatggcgaaa accgcttccf tctttnttgc ccttcttbal ttatgtgaac 240
nactggttgg cttttcttgn atcttcttta aactggaaag ttcacttngg aaaatgaata 300
tcttgc      306

```

<210> 411
 <211> 261
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(261)
 <223> n = A,T,C or G

<400> 411
 agagatattt cttagggttaa agttcataga gttcccatga actatatgac tggccacaca 60
 ggaatctttt tatttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
 tttaaatgtc tgaatggaa cagatttcaa aaaaaaaccc ccaatctag ggtgggaca 180
 aggaaggaaa gatgtgaata ggctgatggg caaaaacca atttaccat cagttcragc 240
 cttcttcaa gngaggcaa a 261

<210> 412
 <211> 241
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(241)
 <223> n = A,T,C or G

<400> 412
 gtccaatgtt acctgacatt tctacaacac cccactcacc gatcatctcg ttgccagtg 60
 ggaacataac agcctgaatt tggaaaaaat cattctgttt ttgcccagg caatactacg 120
 actgactttg atggctccac aacataaac cagtgtaaa acagaagatg tggaggggag 180
 ctgggagatt tcatctggta cattgaattc ccaactaac cangcaatta ccagccaac 240
 a 241

<210> 413
 <211> 231
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(231)
 <223> n = A,T,C or G

<400> 413
 aactcttaca atccaagtga ctcatctgtg tgcttgaac ctttccactg tctcatctcc 60
 ctcatccaag tctctagtac ctctcttttg ttgtgaaggc taatcaaat gaacacaaa 120
 aagtttactc tctcatcttg gaaactaaa actctcttct tctgggtct gagggtcc 180
 agaatccttg atcanttct cagatcattg ggaacaccan atcaggaacc t 231

<210> 414
 <211> 234
 <212> DNA
 <213> Homo sapiens

<400> 414
 actgtccatg aagcactgag cagaagctgg aggcacacac caccagacac lcaacgcaag 60
 gntggagctg aacacataac ccaactcttc ctggaggcac tgggagacct agagaaggct 120
 gtgagccaag gagggagggt ctctctttgg catgggatyg ggatgaagta aggagagggga 180
 ctggaccccc tggaaagctga ttcaccatgg ggggaggtgt attgaggtcc tcca 234

<210> 415
 <211> 217
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> {1}...{217}
 <223> n = A,T,C or G

<400> 415
 gcataggatt aagactgagt atcttttcta cattctttta actttctaag gggcacttct 60
 caaaacacag accaggtagc aatctctcac tgcctaaagg nctctccac cactttctca 120
 carctagcaa tagtagaatt cagtcctact tctgaggcca gaagaatggt tcaquaaat 180
 antggattat aaaaataaac aattaagaaa aataatc 217

<210> 416
 <211> 213
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> {1}...{213}
 <223> n = A,T,C or G

<400> 416
 atgcatatnt aaaggaact gctctgcttt tagaagcat ctggactgct ctctgcatga 60
 ggacacagcag taaagctctt tgaattccag aatcaagaac ctctcccttc agactattac 120
 cgaatgcaag gtgggttaatt gaaggccact attgatgtct caaatagaag gatattgact 180
 atattgganc agatggagtc tctactacaa aag 213

<210> 417
 <211> 303
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> {1}...{303}
 <223> n = A,T,C or G

<400> 417
 nagtctttag gcccatcagg gaagttcaca ctggagagaa gtcatacata tgaactgtat 60
 gtgggaaagg ctttactctg agttcaatc tcaagcaca tcaagagctc cactctggag 120
 agaagccaac caaatgcaat gagtgtggga agagcttcag gagggattcc cattatcaag 180
 ttcattctagt ggtccacaca ggaagagaaac cctataaatg tgaatctatg ggggaaggact 240
 tcaatcaag ctctctcttc caaatccatc agaaaggncc cagtatanen aaacctttta 300
 agt 303

<210> 418
 <211> 328
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(328)
 <223> n = A,T,C or G

<400> 418
 tttttggcgg tgggtgggga gggacgggac angagtctca ctctgttgcc caggctggag 60
 tgcacaggca tgatctcggc tcactacaac cctgacctcc catgtccaag cgattcttgt 120
 ggcctcggct tccctgtgac tagaattaca ggcacatgcc accacaccca gctagttttt 180
 gtatttttag tagagacagg gtttcacct gttggccagg ctggtctcaa actcctnacc 240
 tcagnggtca ggcctggtct aaactcctga cctcaagtga ttgcccacc tcaagctccc 300
 aaagtgcctn gattacaggc cgtgagcc 328

<210> 419
 <211> 389
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(389)
 <223> n = A,T,C or G

<400> 419
 cctctctcaag auggcctgtg gtccgacctc cggcaaccaa gaagcctgca glgcatatg 60
 acccttgagg catggactgg agcctgaaag gcagcgtaca ccttgcctcc gatcttgctg 120
 ctctgttccc ctctgtggct ccattccatg cacagttgtt gcactgaggc ttgtgcaggc 180
 cgagcaaggc caagctgggt caaaggagca ccagtcacct ctgccacggt gtgccaggca 240
 ccggttctcc agccaccaa ctcactcggt cncgcacatg gcacatcagt tctctatccc 300
 taagggtagg accaaagggc atctgctttt ctgaagtcct ctgctctatc agccatcacg 360
 tggcagccac tcnngctgtg togaacggg 389

<210> 420
 <211> 408
 <212> DNA
 <213> Homo sapiens

<400> 420
 gttcctccta actcctgcca gaaacagctc tccccaacat gagagctgca cccctcctcc 60
 tggccagggc agcaagcctt agccttggtc tcttggtttc gcttttttc tggctagacc 120
 gaagtgtact agccaaggag ctgaagtttg tgactttggt gtttcggcat ggagacccga 180
 gtcccattga cacccttccc actgacccca taagygaaac ctcatggcca caaggatttg 240
 gccaaactca cccgctgggc atygagcagc attatgaaat tggagagtat ataagaaaga 300
 gatatagaaa attcttgaat gagtccctata aacatgaaca ggttctatct cgaagcacag 360
 acgttcgacc gactttgatg aagtgcctat accaaccctg caagcccg 408

<210> 421
 <211> 352
 <212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}...{352}

<223> n = A,T,C or G

<400> 421

```
gctcaaaaat ctttttactg atnggcctgg ctacacaatc attgactatt acggaggcca 60
gagagagact aggcctggcc tgggagccct gtgcctacta naagcacatt agattatcca 120
ttactgaca gaaacaggtct ttttgggtc cttcttctcc accacnatat acttgcagtc 180
ctcttctttg aagattcttt ggcagttgtc ttgtcatuu cccacaggtg tggaaacaag 240
ggtgcaacat gaaatttctg ttctgtagca agtgcattgt tacaaggttg gcaagtctgc 300
cactccaggt ttattgggtg ttctgttctt ttgagatcca tgcatttctt gg 352
```

<210> 422

<211> 337

<212> DNA

<213> Homo sapiens

<400> 422

```
atgccacacat gctggcaatg cagcggggcg tccaaggcct gcatatccag cccaagctgg 60
cgaatgatcga cggcaaccgt tgcocgaagt tgcctgctcc agtccgaagc gtggtcaagg 120
gcgatagcaa ggtgcgggag atcgcgggag cgtcaatcct ggccaagggt agcngl'gac 180
gtgaaatggc agctgtcgaa ttgatctacc cgggttctgg catcggcggg catcagggtt 240
atccgacacc ggtgcacctg gaagccttgc agcngctggg gacgacgccc attcaccgac 300
gcttcttccg ccggtacggc tggcttatga aaattat. 337
```

<210> 423

<211> 310

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}...{310}

<223> n = A,T,C or G

<400> 423

```
gctcaaaaat ctttttactg atatggcatg gctacacuat cattgactat tagaggccag 60
aggagaatga agcctgggct gggagccctg tgcctactan aagcncatta gattatccat 120
ttactgacag aacaggtctt ttttgggtcc ttcttctcca ccacgatata ttgcagtc 180
tcttcttga agattctttg gcagttgtct ttgtcataac cccacaggtgt anaaacaagg 240
gtgcaacatg aactttctgt ttctgtagca gtgcattgtc cactgttctc aagtctgccc 300
tccgagttta 310
```

<210> 424

<211> 370

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}...{370}

<223> n = A,T,C or G

```

<400> 424
gctcaaaaat ctcttttactg ataggcatgg ctacacaatc attgactatt agaggucaga 60
ggagaaatgag guctggcctg ggagccctgt gctactaga agcacattag attatccatt 120
cactgacaga acagggtctt. tttgggtcct tcttctccac cactatatac ttgtagtctt 180
ccttctttaa gattcttttg cagttgtctt tgtcataacc cccaggtyta gaaacatcct 240
ggttgaatct cctggaaactc cctcattagg tatgaattag catgatgcat tgcataaagt 300
caccgaaggty gcaaaagatca caacgctgac caggaaaca ttcattgtga taagcaggac 360
tcctgtagag 370

```

```

<210> 425
<211> 216
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1) ... (216)
<223> n = A,T,C or G

```

```

<400> 425
aattgctatn ntttattttt ccaactcaaa taattaccaa aaaaaaaaaa tnttaaataa 60
taacaaacna acatcaaggc aaanaaaaca ggaatggnty actntgcata aatnaggcca 120
anattatcca ttatnttaaa ggttgacttc agntacagc acacagacaa acatgccag 180
gaggatntcu ggaacgctcg atgtntctty aggagg 216

```

```

<210> 426
<211> 596
<212> DNA
<213> Homo sapiens

```

```

<400> 426
cttcagtgga ggataaccct gttgcccgg gccgagggtc tccattaggc ctgattgat 60
tggcagtcag tgatggaagg gtgttctaat catccgac. gcccaaggc tgcctggcca 120
gctctctgtt ttgctgaagt ggcagtagga cctaatttgt taattaagag tagatggtga 180
gctgtccttg tattttgatt aacctaatg cctcccagc ccgaatcggc ttcagctgga 240
gacatcacgg caacttttaa tgaatgatt tgaagggcc ttaaggaggc ctcccggtta 300
ttaggcagtc catctgcact gataactct tggcagctga gctggtcggc gctgtggccc 360
aaacgcacac ttggcctttg gtcttgagat accactctta atcttttagt catgcttgag 420
ggtaggatgg cttttcagct ttaacccaat ttgactgac ttggaagtgt agccaggaga 480
atacartcat atactcgtgg gcttagaggc caccgagat gtcattgggc tactgctga 540
gtcccgtctg tcccatccca ggaccttcca tcggcagta cctgggagcc cgtgct 596

```

```

<210> 427
<211> 107
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1) ... (107)
<223> n = A,T,C or G

```

```

<400> 427
gaagaattca agttagggtt attcaagggt ctlaaagaga atccatanaa caggatuccag 60

```

cccgaggagca gccttanaga gctccctgttt gactgcccgg ctcaagg 107

<210> 428
 <211> 38
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(38)
 <223> n = A,T,C or G

<400> 428
 gaacttcma ankangactt tattcactat ttacatt 38

<210> 429
 <211> 544
 <212> DNA
 <213> Homo sapiens

<400> 429
 ctttgctgga cggaaataaa gtggacgcaa gcatgacctc ctgatgaggg cgcctgcattt 60
 attgaagagc ggcctgcagcc ctgcgggttca gattaaaaac cgagaatttg atagacgccg 120
 atatccacga actcctgaag gactttctga ttatccaca atccaatcat cggcttttcag 180
 tttagatggg ggcctcatcc ctgtagaacc tgacltggcc gtggctggga tccactcgtt 240
 gccctccaut ccagttacac ctccctccac atctctctct gtlgggtctg tgcctgctca 300
 agatactaag cccacatttg agatgcagca gncatctccc ccatttctc ctgtccatcc 360
 tgaatgtcac ttaaaaaac tgcctcttla tgaatgctct gahgttctca tcaagcacc 420
 gaggtttagt caaagcagta ttcagcgatt tcaagagaag tttcttattt ttgctttgac 480
 acctcaacaa gttcagagaga tatgcatatc cggggatttt ttgcccgggt gtaggagaga 540
 tctt 544

<210> 430
 <211> 507
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(507)
 <223> n = A,T,C or G

<400> 430
 cttatcncaa tggggctccc aaacttgggt gtgcagtggg aactccgggg gaattttgaa 60
 gaacactgac acccatcttc caccrcgaca ctctgattta attgggctgc agtgagaaca 120
 gagcatcaat ttaaaaagct gcccaagaatg ttntcctggg cagcgttgtg atctctgccc 180
 ccttrgtgac ttatgtcaat gcataatgct atttcatacc taatggggga gttccaggag 240
 attcaaccag gatgtttcta cncctgtggg ttatgacaaa gacaactgcc aaggaatntt 300
 caagcaggag gactgcaagt atatcgtggc gyagaagaag gacccaaaaa agacctgttc 360
 tgcagtgaa tggatantct aatgtgcttc tagtgggcac agggctcccc ggcaggccct 420
 cattctcctc tggcctctaa tagtcaatga ttgtgtagcc atgacctatc gtaaaaagat 480
 ttttgagcaa aaaaaaaa aaaaaa 507

<210> 431
 <211> 392

<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = A,T,C or G

<400> 431
gaaagattcag aatggataaa aacaaatgaa gtacaaaata tttcagatlt acatagcgat 60
aaacaagaaa gcacttatca gaggactta caaatggag tatcactctan aaccatcatc 120
taccatgggt aatgttgaga ttagcacagc tgtattatct gtacattgca aaacactaga 180
aagagatggg aaacaaaatc caaggagttt tgtgtgtgga gtccctgggt ttrcaacaga 240
catcattcca gcattctgag attagggnga ttggggatca ttctggagtc ggaatgttca 300
acaaaagtga tgttgtttag taatatgtac aacttctgga tctatgcaga catggaaggt 360
gcaatgaatc tggcttttac tctgtgttct ct 392

<210> 432
<211> 387
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(387)
<223> n = A,T,C or G

<400> 432
ggtatccnta cataatcaaa tatagctgta gtacatgttt tcattggngt agattacac 60
aatgcaagg caacatgtgt agatctcttg tcttattctt ttgctatata tactgtattg 120
ngtagtccaa gctctcggna gtccagccac tgggaacat gctccctta gatlaacctc 180
gtggaacctn ttgttgnatt gtctgaacty tagngccctg tatcttgcct ctgtctgnga 240
attctgttgc ttctggggga ttcccttngg atgcagagga cccacacaca gatgaacaga 300
ctctgaattt ntccaatcac agctgcgatt aagacatact gaaatcgtac aggaacggga 360
acaacgtata gaacactgga gtccctt 387

<210> 433
<211> 281
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(281)
<223> n = A,T,C or G

<400> 433
ttcaactagc anagaaact gcttcagggg gctgtaaatg aaaggcttcc acgaggttat 60
ctgattaaag aacactaaga gagggaacag gctagaagcc gcaggatgtc tacactatag 120
caggcactat ttgggttggc tggaggagcl gtggaaazca tggagagatt ggugrtggag 180
atcgccgtgg ctattcctcn ttgntattac accagnaggy ntctctgtnt gccactgggt 240
tnnaaaaccg ntatacaata atgatagaat aggaacacac t 281

<210> 434
<211> 484

<212> DNA

<213> Homo sapiens

<400> 434

```

tttctaaata aguatctagt gctcagtcct tactgagtao tctttctctc cctctctctg 60
aatttaatte ttccaacttg caabctgaaa ggattacaca ttccactctg atgtatatctg 120
tgctgcaaaa aaaaaaaagt gtctttgttt aaaaactact ggctctgtgaa tccatcttgc 180
ttttcccca ttggaactag tcatbaaccc atctctgaac tggtagaaaa acatctgaag 240
agctagtcta cuagcatctg acaggtgaat tggatgggtc tcagaacctt tccaccaga 300
cagcctgttt ctatcctgtt taataaatta gtctgggttc tctcatgaa taacaaaccc 360
tgctcgaatc tgcacataa aagtcctgtg cttagaagtt agtcagcacc cccaccaaa 420
tttatttttc tatgtgtttt ttgaacata tgagtgtttt gaaataaag taccatgtc 480
ttta

```

484

<210> 435

<211> 424

<212> DNA

<213> Homo sapiens

<400> 435

```

gagcagctca gagcaggtca cttctctgct tccagctcct ccttcaggga agcccatgt 60
ggtagcttt caatatcgca gggtcttact cctctgctc tataagctca aaccccaaa 120
cgatcgggca agtaaacccc ctccctcgcc gacttcggaa ctggcgagag ttcagcgca 180
atgggctctt ggggaggggg caagatagat ggggaggagc ggcatgggtc ggggtgacc 240
cttgagagga ggaanaaggc cacaagaggc gctgccaccg ccactaacgg agatrgccct 300
ggtagagacc cttaggggtc tggaaacctt ggaactccca tgcctcaact ccccautct 360
gctatcagaa acttaaacct ggggaatttc cctgtttttc actcgcaata aattcagagc 420
aaac

```

424

<210> 436

<211> 667

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... [667]

<223> n = A,T,C or G

<400> 436

```

accttgggaa naetctcaca atataaaggg tcttagactt tactccaaat tccaaaagg 60
tcttggccat gtaatcttga aagttttccc aaggtagcta taaaatcctt ataagggtgc 120
agcctcttct ggaattcttc tgatttcaaa gtctcactct caagtctctg aaaaaggagg 180
cagttcttga aagycaggta tagcaactga tcttcagaaa gaggaactgt gtgcaccggg 240
atgggctgcc agagtagggt agyatttcag atgctgacac ctctcggggg aaacaggggt 300
gccaggtttg tcatagcact catcaaaagt cggctcaatgt ctgtgcttcg aatataaacc 360
tgttcatgtt tataggactc attcaagaat tttctatctc tctttcttat atactctca 420
agttcataat gctgctccat gccagctcgg gtgagttggc caaatccttg tggccatgag 480
gattccttla tggggtcagt gggaaagggt tcaatgggac ttcgggtctc atgccgaac 540
acraaagtca caaacttcaa ctcttgggt agtaactctc ggtctagcaa gaaaaaagg 600
agaaacaaag agccaagggt aaggcttgnr gacctgacag gaggaggggt gcaqutctca 660
tgttgag

```

667

<210> 437

<211> 693

<212> DNA

<213> Homo sapiens

<400> 437

```

ctacgtctca accctcattt ctaggtaagg aatcttaagl ccaagatat taagtgaetc 60
acacagccag gtaaggaaag ctggattggc acactaggac cctaccatac cgggttttgt 120
tanaotcag gttaggaggc tgaataagctt ggaaggaaat ccagacagct ttctcagatc 180
ataaagata attotttagc catgttcttc tccagagcag acctgaaatg aacgcacagc 240
aggtactcct ctattttcac cctotttgc tctactctct ggcagtcaga cctgtgggag 300
gccctgggag aaagcagetc tctggatgtt tgtacagatc atggactatt ctctgtggac 360
catttctcca ggtcacctca ggtgtcacta ttgggggggac agccagcatc tttagcttcc 420
atttgagttt ctgtctgtct tcagtagagg aaacttttgc tcttcacact tccatclga 480
acacctaacct gctgttgcct ctgaggtggt gaaagacaga tatagagctt acagtattta 540
tctattttct aggaactgag ggctgtgggg taccctgtcg tgccaaaaaa gatcctgttt 600
taaggacatg ttgcttcaga gatgtctgta actatctggg ggtctgtttg gclctttacc 660
ctgcatcatg tgcctctctg gctgaaaatg acc

```

693

<210> 438

<211> 360

<212> DNA

<213> Homo sapiens

<400> 438

```

ctgcttatca caatgaatgt tctcctgggc agcgttgtga tctttgccac ctctgtgact 60
ctatgcacag catcatgcta ttcatacct aatgagggag ttcagagaga ttcaaccagg 120
atgtttctac acctgtgggt tatgacaaag acaactgcc aagaaatcttc aagaaggagg 180
actgcaagta tctctgttgg agaagaagga cccaaaaaag acctgttctg tcagtgaatg 240
gataatctaa tgtgtttcta gtaggacacg ggctcccagg ccaggcctca ttctctctg 300
gctcttaata gtcaataatt gtgtagccat ggcctatcagt aaaaagattt ttgagcaaac 360

```

<210> 439

<211> 431

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(431)

<223> n = A,T,C or G

<400> 439

```

gttcttntta actcctgcc aaaaacagetc tctcaacat gagagctgca cccctctctc 60
tggccagggc agcaaggcct agccttggct tcttgtttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtctg tgactttggg atttcggcat ggagaccgaa 180
gtcccattga cactttctcc actgacccca tkaaggaaat ctcatggcca caaggatttg 240
gccaactcar ccagctgggc atggagcagc attatgaact tggagagtat ataaayaaaga 300
gatatagaaa attcttgaat gactcctata aacatgaaca ggttttatat cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgccga cgcggccgag 420
aatttagtag t

```

431

<210> 440

<211> 523

<212> DNA

<213> Homo sapiens

<400> 440

```

agagataaag cttaggtcaa agttcataga gtcccatga actatctgac tggcacaaca 60
ggatcttttg tatttaagga ttctgagatt ttgcttgggc aggttagat. aaggtgttc 120
tttaaatgtc tgaatggaa cagatttcaa aaaaaaacc cacaatctag ggtgggaaca 180
aygaaggaa gatgtgaata ggtgtgtgg caaaaaacaa atttaccat. caattccagc 240
cttctctcaa ggaagggcaa agaaaggaga taaggtggag acatctgaa agtcttctcc 300
actggaaac tgcactatc tgttttata tttctgttaa atatatgag gttacagaac 360
taaaattta aacttcttg tgttcttgg tcttggaa cttatgttc ttttaagaa 420
acaaaatca aacttctag aagatttga tgtatgtat acatatagca gctcttgaag 480
tatatctatc atagaaata agtcattcga tgaagcaag cta 523

```

<210> 441

<211> 430

<212> DNA

<213> Homo sapiens

<400> 441

```

gttcttctca actcctgcaa gaaacagctc tctcaacat gagagctgca cccctcctcc 60
tggucagggc agcaagcctt. agccttggct tcttgttct gcttttttc tggctagaac 120
gaagtgtact agccaaggay ttgaagtttg tgaacttgg gtthcggcat ggagacgaa 180
gtcccatgca cacttttccc actgaaccca taaaggaatc ctcatggcaa caaghatttg 240
gccaaactac ccagctgggc atgggacagc attatgaact tggagagtac atagaaaga 300
gatctcgaaa attcttgaat gagtctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgag agtgcctatga caaacctggc agccctgaga agcgcccgcg 420
aatctgagtag 430

```

<210> 442

<211> 362

<212> DNA

<213> Homo sapiens

<400> 442

```

ctaagggaatt agtagtgctc ccctcacttg tttggagtyt gctattctaa aagattttga 60
tttcttggaa tgcatttat attttaaact tgggtgggga aagagttata ggaccacagt 120
cttcaactct gatacttgta attaatctt ttattgcact tgttttgacc attaaagctat 180
atgttttagaa atggtcattt ttaggaaaaa ttgaaaaaat tctgataata gtgcagaata 240
aatgaattaa tgttttactc attttatatt gaactgttaa tgacaaataa aatttctttt 300
tgatctattt ttgttttcat ttaccagaat aaataactaa aattaaaagt ttgatcacag 360
tc 362

```

<210> 443

<211> 624

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(624)

<223> n = A,T,C or G

<400> 443

```

tttctttttt guaaacaaat atacatcaca gtgaatgtg caatccttgc aaattgcaag 60
ttgaazagaat taaatcaga ggaggggaga gaaagagtac tcagtaggga ctgagcacta 120
aatgcttatt tttaaagaaa tgtaaagagc agaaagcaat. tcaagctacc ctgcttcttg 180
tgcctggctag tactcagggtc ggtgtcagca gacgtagaa ttgaacattg caattgtgag 240

```

```

cccaaacac agaaaatggg gtyaaattgg ccaactttct attaacttgg ttccctgttt 300
tataaattat tttgaaataat atcaccctact tcaaaagggga gttatgaggg ttatatgaac 360
taacgcctac aaaaacattta aacatagata acataggtgc aagtactatg tatctggtac 420
atggttaaac tccttattat taaagtcaac gctaaaatga atgtgtgtgc atatgctaat 480
agtacagaga gagggcactt aaacccaacta agggcctgga gggaaagggtt cctggaaaga 540
ngatgcttgt gctgggtcca aatcttggtc tactalgaac ttggccaaat tatttaaaat 600
ttgtccctat ctgctaaaca galc

```

624

<210> 444

<211> 425

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(425)

<223> n = A,T,C or G

<400> 444

```

gcacatcatt nntcttgcat tctttgagaa taagaagatc agtaaatagt tcagaagtgg 60
gaagctttgt ccaggcctgt gtgtgaaacc aatgttttgc ttgaaatag aacaaagtaag 120
ttcattgcta tagcataaca caaaatttgc ataagtgggtg gtacgcaaat ccttgaalgc 180
tacttaatat gagaggttgg taaaatcctt tgtgcaaac tctaactncc tgaatgtttt 240
gctgtgctgg gacctgtgca tgcagacaa gccaagctg gctgaaggag caaccagcca 300
cctctgcaat ctgcaactc ctgctggcag gatctgtttt tgcacctgt gaagagccaa 360
ggaggcacca gggcraaagt gagtngactt atggtcgacg cggccgcgaa tctagtagta 420
gtaga

```

425

<210> 445

<211> 414

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(414)

<223> n = A,T,C or G

<400> 445

```

catgtttatg nttttggatt actttgggca cctagtgttt ctaaatcgtc tatcattctt 60
ttctgttttt caaaagcaga gatggccaga gtctcaacaa actgtatctt caagtctttg 120
tgaatttctt tgcattgtggc agattattgg atgtagtctt ctttaactag catatnaatc 180
tgggtgtgtt caagataaatg aacagcaaaa tgtggtggaa ctacnatttg gaacattgtg 240
aatgaaaaat tgtgtctcta gattatgtan caataaacta ttccctaacc attgatcttt 300
ggatttttat aatcctactc acaaatgact aggcctctcc ccttgtattt tgaagcagtg 360
tgggtgctgg attgataaaa aaaaaaaag tcgargcggc cgcgaatttc gtac

```

414

<210> 446

<211> 631

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(631)

<223> n = A,T,C or G

<400> 446

```

acaaattaga anaaagtgcg agagaaracc acataacttg tccgggacat tacaaagggt 60
tctgcattga tgggaagtgt gaggcattct tcaatatgca ggagccalcl tgcagggtgt 120
atgctgggtta tactgggcaa caotgtgaaa aaaggacta cagtgttcta tanglttctc 180
ccggtcctgt acgatttcag taltgtctaa tccgagctgt gat.tgggaca attcagattg 240
ctgtcatctg tctggtggtc ctctgcacca caagggccaa kutttaggta atagcatttg 300
actgagattt gtaaaccttc caaccttcaa ggaatgccc cagagcacc agaattcaca 360
ganagaggca kaatcacggg cactacagtt cagacaalac aacagagcg tccacgggt 420
taactcaag ggagcatgtt tcaactggtc tggactaccg agagcttggg utacacaata 480
cagtatctat gacaaagaa taagacaaga gatctacaca tyttgcttg catttctgtg 540
aatctacacc aatgaaaaca tgtactacag utatatttga tcatglatgg utatatttga 600
aatagfatac attgtcttga tgtttttct g 631

```

<210> 447

<211> 585

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}... (585)

<223> n = A,T,C or G

<400> 447

```

ccttgggaaa antnlcagaa tatnaagggt cgtagactll actccaaatt ccaaaagggt 60
cctgggcaatg taatcctgaa agttttccca aggtagctat aaaatcctta tanygggtga 120
gctctctctg gaattcctct gatttcaag tctcaactctc aagttcttga aaacgagggt 180
agttcctgaa aygcagggtat agcaactgat ctccagaaag aggaactgtg tgcacgggga 240
tgggctgcca gagtagggtt ggaattccga tgcctgacac t.tctggggga aacagggtgt 300
ccagglttgt catagcctc atcaaggtcc ggtcaacgtc tgtgcttcga at.tcaacct 360
gttcatgttt ataggactca ttcaggaatt tctatatct ct.tcttata tactctcaa 420
gttcataatg ctgctccatg cccagctggg tgaagtlygg aaatccttgt ggcatgagg 480
attcctttat ggggtcagtg ggaagggtgt caatgggact tgggtctcca tgcrgaaaca 540
cnaagctcac aaattcaac tcttggcta gfacacttg gtcta 585

```

<210> 448

<211> 93

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}... (93)

<223> n = A,T,C or G

<400> 448

```

tactcttggg tcaattctgan nncggactg acontgccag ccttgccgan gggccnccat 60
ggctccttag tgcctctggag agganggggc tag 93

```

<210> 449

<211> 706

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}...{706}

<223> n = A,T,C or G

<400> 449

```

ccaagtttcct gctntgtgct ggacgctgga caggggggcaa aagcctttgc tegtgggtca 60
ttctgancac cgaactgacc atgccagccc tgcctatggt cctccatggc tccctagtgc 120
cctggagagg aggtgtctag tccagagata gtccctggaag gtcgctctcg ngaggagcca 180
cggggacagc atcctgcaga tggtcggggc cgtcccatte gccattcagg ctgcgcaact 240
gttgggaagg gcgacgggtg cgggctcttt cgtatttacc ccagctggcg aaagggggat 300
gtgctgcacg gcgatttact tgggttaacg caggggtttt ccagtcncca gtttgtaaaa 360
cgacggccag tgaattgaat ttgggtgacn ctatagaaga gctatgacgt cgcattgcacg 420
cgtacgtacg cttgggtctc cttagagcggc cgcctactac tactaaatc ggggcgcgt 480
cgacgtggga tccncaactga ggaagtggag agtgacatgt actggacnct gtccatgaa 540
cactgagcag aagctggagg cacaacgnc cagaactca cagctactca ggggctgag 600
aacaggttga acctgggagg tgggaggttc aatgagctga gatcagggcn ctgcncccca 660
gcattgattga cagagtgaaa ctcctcttta aaaaaaaa aaaaaa 706

```

<210> 450

<211> 493

<212> DNA

<213> Homo sapiens

<400> 450

```

gagacggagt gtcaactctgt tgcctcggct ggagtgcagc aagacactgt ctaagaaaaa 60
acagttttta aaggtaaaaa accataaaaa gaaatctcct atagtggaaa taagagagtc 120
aaatgaggtc ggaactttta caaagggatc ttacagacat gtgcgcaata tcaactgcacg 180
agcctaagta taagaaacaa ctttggggag aaacacatcat ttgacagtga ggtacacattc 240
caggtcaggt agtgaaatgg gtgggaattaa actcaaatca atcctgcccag ctgaaacgca 300
agagacactg tcagagagttt aaaaaagtga ttctatccat gaggtgattc cacagctctc 360
tcaagtcac acatctgtga actcacagac caagttctta aaccactgtt caaactctgt 420
tacacatcag aatnacctgg agagctttac aaactccccat tgcgagggtt cgaagcggcc 480
gcgaattctag tag 493

```

<210> 451

<211> 501

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}...{501}

<223> n = A,T,C or G

<400> 451

```

gggcggcttc catteggcat tccggctguy caactgttgg gaagggcgat cgggtcgggc 60
ctcttcgcta ttacggcagc tggcgaaagg gggatgtgct gcaaggcgat taagtctgggt 120
aacggcaggg ttttcccggt cncgacgttg taaaacgacg gccagtgant tgaattctagg 180
tgacnclata gaaagagctat gaagtccgat gaaagcgtae gtaagcttgg atcctctaga 240
ggggcggcct actactacta aattcggcgg cggctcgaag tgggatccnc actgagagag 300
tgggagagtg uatgtgctgg acnctgtcca tgaagcactg agcagaagct ggaagtcacaa 360
cgcnccagac actcacaggt actcaggagg ctgagaacag gttgaacctg ggaggtggag 420
gttgcacatga gctgagatca ggcnctgcn cccagcactg gatgaragag tgaactcca 480

```

tcttaaaaaa aaaaaa00000 A

501

<210> 452

<211> 51

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}...{51}

<223> n = A,T,C or G

<400> 452

agagcgggttc accnttaccac cncctttctag gatyyggnntt ggggagcaag c 51

<210> 453

<211> 317

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> {1}...{317}

<223> n = A,T,C or G

<400> 453

tacatcttgc tttttcccca ttggaactag tcatcaacc atctctgaac tggtaguaaa 60
acatctgaag agctagtctc tcaagcatctg gcaagtgaat tggatcyytc tcagaaccat 120
ttcaccacac caguctgttt ctatcctgtt taataaattc gtttgggttc tctacatgca 180
taacaaaccc tgcaccaatc tgcacacata aagtctgtga cttagaagtt antcagcacc 240
cccaccacac ttatttttct tatgtgtttt ttgcaacata tgaagtgttt gaaataaagg 300
taaccatgtc ttatta 317

<210> 454

<211> 231

<212> DNA

<213> Homo sapiens

<400> 454

ttcggggtac aatcaactct cagagtgtag tttccttcta tagatgagtc agrattaata 60
taagcracgc caggtctctg aaggagtctt gaattcctct ctgctcactc agtagaacca 120
agaagaccac attcttctgc atcccagctt gcaaacaaaa ttgtctctct aggtcttcac 180
ccttctctct tcaagtgttc aaagctcctc acaatcttat gaacaacagc t 231

<210> 455

<211> 231

<212> DNA

<213> Homo sapiens

<400> 455

taccaagag ggcataata tcagtctcac agtagggctc accatctctc aagtgaacaa 60
cattgttccg atggggtttt ccacaggcta cacacacaaa acaggaaaca tgccaagttt 120
gttcaacgc attgatyact tctccaagga tcttcttctg gcacagacca cattcagggg 180
caaygaattt ctcatagcac agctcaaat acagggtctc tttctctct a 231

<210> 456
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 456
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<210> 459
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<400> 459
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ccacactccc caccagcaca cggccagcct ggagcccaaca gaagggtcct cctgcagcca 180
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<211> 231

<212> DNA

<213> Homo sapiens

<400> 461

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<210> 462

<211> 231

<212> DNA

<213> Homo sapiens

<400> 462

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gaagaaactgt tagagagacc aaacagggtg tgggttagag attccagag tcttacttt 180
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<211> 231

<212> DNA

<213> Homo sapiens

<400> 463

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<210> 464

<211> 231

<212> DNA

<213> Homo sapiens

<400> 464

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<210> 465

<211> 231

<212> DNA

<213> Homo sapiens

<400> 465

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<211> 231

<212> DNA

<213> Homo sapiens

<400> 466

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<211> 311

<212> DNA

<213> Homo sapiens

<400> 467

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<210> 468

<211> 3112

<212> DNA

<213> Homo sapiens

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<211> 2229

<212> DNA

<213> Homo sapiens

<400> 469

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<210> 470

<211> 2426

<212> DNA

<213> Homo sapiens

<400> 470

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<210> 471

<211> 812

<212> DNA

<213> Homo sapiens

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<212> DNA

<213> Homo sapiens

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<223> n = A,T,C or G

<400> 472

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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : C12N 15/12, C07K 14/47, C12Q 1/68, A61K 39/395, G01N 33/68, 33/574, C07K 16/30, C12N 15/62, 5/02 // A61P 35/00		A3	(11) International Publication Number: WO 00/04149 (43) International Publication Date: 27 January 2000 (27.01.00)																					
(21) International Application Number: PCT/US99/15838 (22) International Filing Date: 14 July 1999 (14.07.99) (30) Priority Data: <table border="0"> <tr> <td>09/115,453</td> <td>14 July 1998 (14.07.98)</td> <td>US</td> </tr> <tr> <td>09/116,134</td> <td>14 July 1998 (14.07.98)</td> <td>US</td> </tr> <tr> <td>09/159,822</td> <td>23 September 1998 (23.09.98)</td> <td>US</td> </tr> <tr> <td>09/159,812</td> <td>23 September 1998 (23.09.98)</td> <td>US</td> </tr> <tr> <td>09/232,880</td> <td>15 January 1999 (15.01.99)</td> <td>US</td> </tr> <tr> <td>09/232,149</td> <td>15 January 1999 (15.01.99)</td> <td>US</td> </tr> <tr> <td>09/288,946</td> <td>9 April 1999 (09.04.99)</td> <td>US</td> </tr> </table> (71) Applicant: CORIXA CORPORATION [US/US]; Suite 200, 1124 Columbia Street, Seattle, WA 98104 (US). (72) Inventors: DILLON, Davin, Clifford; 21607 N.E. 24th Street, Redmond, WA 98053 (US). HARLOCKER, Susan, Louise; 6203 20th Avenue N.W., Seattle, WA 98107 (US). YUQIU, Jiang; 5001 South 232nd Street, Kent, WA 98032 (US). XU, Jiangchun; 15805 S.E. 43rd Place, Bellevue, WA 98006 (US). MITCHAM, Jennifer, Lynn; 16677 Northeast 88th Street, Redmond, WA 98052 (US).		09/115,453	14 July 1998 (14.07.98)	US	09/116,134	14 July 1998 (14.07.98)	US	09/159,822	23 September 1998 (23.09.98)	US	09/159,812	23 September 1998 (23.09.98)	US	09/232,880	15 January 1999 (15.01.99)	US	09/232,149	15 January 1999 (15.01.99)	US	09/288,946	9 April 1999 (09.04.99)	US	(74) Agents: MAKI, David, J. et al.; Seed and Berry LLP, 6300 Columbia, 701 Fifth Avenue, Seattle, WA 98104-7092 (US). (81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> (88) Date of publication of the international search report: 20 July 2000 (20.07.00)	
09/115,453	14 July 1998 (14.07.98)	US																						
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09/232,149	15 January 1999 (15.01.99)	US																						
09/288,946	9 April 1999 (09.04.99)	US																						
(54) Title: COMPOSITIONS AND METHODS FOR THERAPY AND DIAGNOSIS OF PROSTATE CANCER																								
(57) Abstract Compositions and methods for the therapy and diagnosis of cancer, such as prostate cancer, are disclosed. Compositions may comprise one or more prostate tumor proteins, immunogenic portions thereof, or polynucleotides that encode such portions. Alternatively, a therapeutic composition may comprise an antigen presenting cell that expresses a prostate tumor protein, or a T cell that is specific for cells expressing such a protein. Such compositions may be used, for example, for the prevention and treatment of diseases such as prostate cancer. Diagnostic methods based on detecting a prostate tumor protein, or mRNA encoding such a protein, in a sample are also provided.																								

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/JS 99/15838

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/12 C07K14/47 C12Q1/68 A61K39/395 G01N33/68
 G01N33/574 C07K16/30 C12N15/62 C12N5/02
 //A61P35/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 97 33909 A (CORIXA CORP) 18 September 1997 (1997-09-18) the whole document	1-22, 29-31, 35-49, 53-79
A	SJOGREN H O: "Therapeutic immunization against cancer antigens using genetically engineered cells" IMMUNOTECHNOLOGY, vol. 3, no. 3, 1 October 1997 (1997-10-01), pages 161-172, XP004097000 ISSN: 1380-2933 the whole document	23-28, 32-34, 53-57



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

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- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"Z" document member of the same patent family

Date of the actual completion of the international search

31 January 2000

Date of mailing of the international search report

04.05.00

Name and mailing address of the ISA

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ANDRES S.M.

INTERNATIONAL SEARCH REPORT

International Application No

PC1, JS 99/15838

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CHU R S ET AL: "CPG OLIGODEOXYNUCLEOTIDES ACT AS ADJUVANTS THAT SWITCH ON T HELPER 1 (TH1) IMMUNITY" JOURNAL OF EXPERIMENTAL MEDICINE, vol. 186, no. 10, 1 November 1997 (1997-11-01), pages 1623-1631, XP002910130 ISSN: 0022-1007 the whole document ---	14-20, 25-27, 41-47
A	EP 0 317 141 A (BECTON DICKINSON CO) 24 May 1989 (1989-05-24) the whole document ---	50-52
A	ZITVOGEL L ET AL: "Eradication of established murine tumors using a novel cell-free vaccine: dendritic cell-derived exosomes" NATURE MEDICINE, vol. 4, no. 5, 1 May 1998 (1998-05-01), pages 594-600, XP002085387 ISSN: 1078-8956 cited in the application ---	
P,X	WO 98 37093 A (CORIXA CORP) 27 August 1998 (1998-08-27) page 3, line 20 -page 22, line 2 page 35, line 9 - last line page 76, line 34 -page 78, line 22 claims ---	1-15, 17-19, 21,22, 29-31, 34,35, 39-42, 44-46, 48,49, 58-79
P,X	WO 98 37418 A (CORIXA CORP) 27 August 1998 (1998-08-27) page 2 -page 24 example 2 page 35, line 15 -page 36, line 11 page 81, line 14 -page 83, line 11 claims -----	1-15, 17-19, 21,22, 29-31, 34,35, 39-42, 44-46, 48,49, 58-79

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 99/ 15838

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
Remark: Although claims 29-34, 48-49, 52, 55-57
are directed to a method of treatment of the human/animal
body, the search has been carried out and based on the alleged
effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such
an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all
searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment
of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report
covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is
restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-79 all partially

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

.....
Invention 1. Claims: 1-79 (all partially)

A polypeptide comprising at least an immunogenic portion of a prostate tumor protein defined as SEQ ID 108 and which is encoded by the related SEQ IDs 2,3,107 (according to the Description of the Sequence Identifiers), fragments and variants thereof, fusion proteins comprising it, polynucleotides or oligonucleotides derived therefrom, antibodies or fragments thereof binding to the polypeptide, pharmaceutical compositions or vaccines comprising these products and their use in methods for inhibiting, monitoring or diagnosing the development of a prostate cancer, for removing tumor cells from a sample or for expanding and/or stimulating T-cells.

Inventions 2. to 439. Claims: 1-79 (all partially and as far as applicable)

As for subject 1. but concerning respectively SEQ IDs 1,4-106,109-111,115-171,173-175,177,179-305,307-315,326,328,330,332-335,340-375,381,382 and 384-472.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JS 99/15838

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